I. RELEVANCE

Thank you for your letter and the information on the Uniformed Services University of the Health Sciences (USUHS) as well as the 2002 Edition of the USU Journal. It is gratifying to see the University provide continuity and leadership for ensuring medical readiness. Alumni are highly trained and will no doubt continue their tradition of providing first-rate Military Health System support. The Cost Avoidance Fact Sheet is further evidence of your commitment and dedication... Please convey to Admiral Zimble my deep appreciation for the hard work he and the people of USUHS are doing for those of us in uniform.

- **General Richard B. Myers, Chairman of the Joint Chiefs of Staff,** Letter to the University, November 20, 2003.

<u>Institutional Integrity.</u> The foundation for the role of the University lies in its charter as the Nation's federal health services university, committed to excellence in military medicine and public health. Through its educational programs, students gain the knowledge and develop the necessary skills to serve as military medical officers, advanced nurse practitioners and anesthetists, and biomedical/public health scientists in the Department of Defense and the Public Health Service. The rigor of the course work is a hallmark of excellence at the institution and fulfills the primary mission of the University... The climate of academic inquiry and engagement, academic and intellectual freedom, and mission accomplishment are regularly monitored through institutional assessment.

- **Evaluation Team of the Middle States Commission on Higher Education,** Report to the Faculty, Administration, Trustees, and Students of the Uniformed Services University of the Health Sciences, April 2, 2003.

As the Executive Agent of the Uniformed Services University of the Health Sciences (USUHS), I would like to comment on the extraordinary achievements of the University... USUHS graduates, with retention averaging twenty years of active duty service, now represent over 22 percent of the total physician officers on active duty in the Armed Forces. And, as provided to the Congress during 2002, the median length of non-obligated service for physician specialists in the Military Health System, not including USUHS graduates, is 2.9 years; however, the median length of non-obligated service for USUHS graduates is 9 years. USUHS graduates are exceeding the original expectations of Congress when the University was established, thus ensuring physician continuity and leadership for the Military Health System... The USUHS-unique training centered in preventive medicine and combat-related health care is essential to providing superior force health protection and improving the quality of life for our service members, retirees, and families. USUHS also provides a significant national service through its continuing medical education courses for military physicians in combat casualty care, tropical medicine, combat stress, disaster medicine, and the medical response to weapons of mass destruction (WMD).

- **Vice Admiral Michael L. Cowan, Surgeon General of the Navy**, Testimony before the Senate Appropriations Committee, Subcommittee on Defense Health, April 30, 2003.

USU's Public Health Program, with its emphasis on community health, ranks sixth in the Nation according to U.S. News & World Report's 2004 rankings of "America's Best Graduate Schools... USU's program ranked just below Tufts University, the Medical College of Wisconsin, Northwestern University, Oregon State University and the University of Rochester on the list of the top 10 community health master or doctorate programs."

- USU Medicine, *U.S. News & World Report Ranks USU Graduate Program in Top Six,* Fall 2003, page 5.

Due to both the extensive military training provided in the multi-Service environment of USUHS and the extraordinary retention rates of the USUHS graduates who serve, on average, at least 18.5 years, USUHS has met, or has exceeded, the goals set by Congress.

- Resolution Number 95, The Eighty-Fifth National Convention of **The American Legion**, August 26-28, 2003.

The accrediting commission pointed out in its summary findings to the University that the mission and philosophy of the USUHS Graduate School of Nursing (GSN) is grounded in the University's mission and in the mission of the Uniformed Services. The GSN curriculum is designed to be specific to the unique mission of military service nurses: to serve in times of war and peace.

- **The Honorable Daniel K. Inouye, United States Senator from Hawaii,** Congressional Record, *Tribute to Dr. Faye Glenn Abdellah,* May 16, 2002, pages S4488-S4489.

Thank you for the 2002 Edition of the USU Journal and for all you do ... to make this report a reality.

- **The Honorable Robert J. Dole, Former United States Senator from Kansas and Senate Majority Leader**, Letter dated November 4, 2003.

Meeting the Special Needs of the Military Health System

I. THE UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES (USU)

Learning to Care for Those in Harm's Way

The University community completed the Year 2003 with renewed dedication. A recognized vital and integrated component of the Military Health System (MHS), USU continues to provide essential support to *Force Health Protection* through its unique training centered in preventive medicine and combat-related health care. In accordance with strategic guidance, the University continues to successfully focus on: RELEVANCE - the critical, or core relevance, of its essential mission to provide continuity, leadership, and responsiveness to the special needs of the MHS; READINESS - the provision of uniformed physicians, advanced practice nurses, and graduate degree recipients who are uniquely qualified to practice and address combat casualty care, tropical medicine, combat stress, disaster medicine, and the medical response to unconventional, disaster, or operational contingencies; and, OPTIMIZATION - the cost-effective management of its resources to ensure the generation of annual cost avoidance for the MHS through its multiple, fully accredited programs (estimated cost avoidance during 2003 was $29.3 million).

ESTABLISHMENT, DEVELOPMENT, AND GOVERNANCE

The Uniformed Services Health Professions Revitalization Act of 1972 Establishes the University. Public Law 92 - 426, *the Uniformed Services Health Professions Revitalization Act of 1972*, established the University as a separate agency within the Department of Defense (DoD). Planning for the development of USU began, in 1974, when the **President of the United States, Richard M. Nixon,** appointed a Board of Regents and the University's first President, **Anthony R. Curreri, M.D.** Initial efforts were focused on establishing the USU School of Medicine (SOM) as the University's first academic program. (A copy of Public Law 92 - 426 is at Appendix A.)

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Collaborative Efforts by the Joint Services and Civilian Medical Communities in the Development of the University. The initial development of objectives for the USU SOM was accomplished through the combined efforts of the USU Board of Regents; the Board of Regents' Educational Affairs Committee; **USU President, Anthony R. Curreri, M.D.**; the first **Dean of the USU SOM, Jay P. Sanford, M.D.**; and, special working groups. Activities used to develop these objectives included committee meetings, retreats, and consultation with a variety of experts from military medicine and civilian medical organizations and institutions. Individuals and groups consulted included: **the Surgeons General** of the Army, Navy, and Air Force; **Chiefs of the Medical Departments/Services** of the Army, Navy, and Air Force; **physicians from** the Walter Reed Army Medical Center, the National Naval Medical Center at Bethesda, the Malcolm Grow United States Air Force Medical Center at Andrews Air Force Base, the Wilford Hall United States Air Force Medical Center, the United States

Army Academy of Health Sciences, the Sheppard Air Force Base Academy of Health Sciences, the Brooke Army Medical Center, and the Armed Forces Institute of Pathology; **the Service Secretaries** from both the Air Force and the Navy; the Association of American Medical Colleges **(AAMC)**; the American Medical Association **(AMA)**; the Liaison Committee on Medical Education **(LCME)**; the Department of Health, Education, and Welfare **(HEW)**; the National Institutes of Health **(NIH)**; and, the following **Universities**: George Washington University; Georgetown University; and, Howard University. The fine tradition of the University's identifying and responding to the special needs of the Uniformed Services has been an on-going process since 1974.

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DoD Directive 5105.45. Significant changes in the USU governance structure resulted from actions taken, during 1991. On April 15, 1991, the Secretary of Defense revised the DoD Directive for Health Affairs, 5136.1, to delegate responsibility for the University from his office to the Assistant Secretary of Defense for Health Affairs (ASD/HA). The authority to appoint the President of the University was retained by the Secretary of Defense. On April 19, 1991, the DoD Directive for USU, 5105.45, was updated to reflect those changes and to define in detail the mission, organization, responsibilities, functions, relationships, authorities, and governance of the University. In a memorandum dated May 3, 1991, the ASD/HA re-delegated the authority for the day-to-day management of the University to the USU President; the current delegation of authority to the USU President for the on-going management of the University is also included in DoD Directive 5105.45. (A copy of the most current revision of DoD Directive 5105.45, dated March 9, 2000, is at Appendix A.)

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Board of Regents' Charter. Prior to 1991, the USU Board of Regents (BOR) had been an independent policy-making body; it is now an advisory committee to the Secretary of Defense. A Charter for the BOR was approved by the Office of the Secretary of Defense (OSD) on April 1, 1991; the most current edition of the BOR Charter is dated April 4, 2003. The Charter defines the objectives and scope of the BOR to: 1) provide advice and guidance to the Secretary of Defense through the ASD/HA for the operation of USU; and, 2) assure that the University operates in the best tradition of academia and is in compliance with the appropriate authorities on accreditation. The USU administration and faculty provided substantial input into the revision of both the USU DoD Directive and the BOR Charter. As a result, the administrative/governance documents, of 1991, reflect the coordinated efforts of the ASD/HA, the BOR, the USU administration and activity heads, SOM department chairs, the SOM Faculty Senate, and the Dean's Executive Advisory Committee. In addition, during this process, the Acting Dean of the SOM coordinated with, and briefed, the LCME and the Commission on Higher Education of the Middle States Association of Colleges and Schools to ensure compliance with the University's accrediting entities on issues regarding governance and administration. To codify the Board's activities, BOR Bylaws were written, during 2000, under the leadership of **Lonnie R. Bristow, M.D., Chair, USU Board of Regents**. On February 6, 2001, the BOR Bylaws were approved. (Copies of the most current BOR Charter and Bylaws are at Appendix A.)

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USU and the 1998 Defense Reform Initiative. In November of 1997, the **Honorable William Cohen, Secretary of Defense,** substantiated his support of the University by including USU as part of his Fiscal Year 1998 Defense Reform Initiative (DRI). Program Budget Decision (PBD) 711 issued on December 17, 1997, outlined the DRI and moved USU from under the direct oversight of the Office of Health Affairs, Office of the Secretary of Defense (OSD), to the collective oversight of the Surgeons General of the Army, Navy and Air Force. The PBD ensured manpower and funding for USU and established the Surgeon General of the Navy as the Executive Agent for program, budget, and funding execution responsibilities. ***The PBD also directed that the University's funding would continue to be programmed, budgeted, and executed within the Defense Health Program.***

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The Establishment of the USU Executive Committee. The administrative process for fiscal matters was defined, during 1998, by the ASD/HA, in consultation with the USU BOR, the USU administration, and the Surgeons General. As a result, DoD Directive 5105.45 was updated, on May 17, 1999, to include the formal establishment of the USU Executive Committee (*to be composed of the three military Surgeons General; membership, throughout 2003, included:* ***Lieutenant General James B. Peake, Surgeon General of the Army****; **Vice Admiral Michael L. Cowan, Surgeon General of the Navy**; and,* ***Lieutenant General George P. Taylor, Jr., Surgeon General of the Air Force***) to provide management oversight for the University. As outlined in DoD Directive 5105.45, the USU President reports through the Executive Committee to the ASD/HA. The Executive Committee, chaired by **Lieutenant General James B. Peake**, conducted meetings that focused on important fiscal and

administrative issues at the University. The USU Executive Committee and the USU Board of Regents have developed a close working relationship in a shared effort to enhance the fiscal and administrative programs at the University (a copy of the current Charter for the USU Executive Committee dated, December 18, 2000, is at Appendix A).

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As the Executive Agent of the Uniformed Services University of the Health Sciences (USUHS), I would like to comment on the extraordinary achievements of the University... USUHS graduates, with retention averaging twenty years of active duty service, now represent over 22 percent of the total physician officers on active duty in the Armed Forces. And, as provided to the Congress during 2002, the median length of non-obligated service for physician specialists in the Military Health System, not including USUHS graduates, is 2.9 years; however, the median length of non-obligated service for USUHS graduates is 9 years. ***USUHS graduates are exceeding the original expectations of Congress when the University was established, thus ensuring physician continuity and leadership for the Military Health System*...** **The USUHS-unique training centered in preventive medicine and combat-related health care is essential to providing superior force health protection and improving the quality of life for our service members, retirees, and families.**

- **Vice Admiral Michael L. Cowan, Surgeon General of the Navy,** Testimony before the Senate Appropriations Committee, Subcommittee on Defense Health, April 30, 2003.

Responsibilities of the Navy as the Executive Agent for USU. As the Executive Agent, the Navy Surgeon General's Office provides oversight for the University's budgeting and programming activities. The DoD Directive 5105.45 further clarifies that the USU funding and personnel requirements will not be offset against the Navy Surgeon General's budget or work-year allocations; thus, USU funding remains within the Defense Health Program.

USU Employees Become Navy Employees. Section 7.2.1 of Directive 5105.45 also directs that USU civilian personnel authorizations will be under the purview of the DoD Executive Agent (Navy) and that USU civilian employees should be moved from OSD and carried on the rolls of the Department of the Navy. The USU civilian employees officially converted from OSD to Navy employees with the changing of the University's Subelement and Unit Identification Code at the end of Fiscal Year 1999. All official reporting documents reflect this change. An inclusive review of the USU personnel instructions to assure compliance with the Navy personnel instructions was completed by the USU Civilian Human Resources Directorate, during 2000; and, a Navy-conducted review and evaluation of the USU Civilian Human Resources Directorate was conducted on January 14-15, 2002. The Navy review team found that *the USU Civilian Human Resources Directorate was in compliance with the self-assessment requirements of SECNAV Instruction 12273.1, dated March 16, 1999, with no corrective actions required*.

Following the implementation of the Modern Defense Civilian Personnel Data System (MDCPDS), during August of 2001, both the USU government service/wage grade (GS/WG) and the USU administratively determined (AD) employees had to be manually reported as Navy civilian employees pending the revision of computer software, which occurred, during 2002. It was agreed that the Human Resource Services Center (HRSC) of Washington Headquarters Services (WHS) would continue to service the University for its personnel requirements, through 2002. By March of 2003, upon the completion of all software and coordination requirements, all USU personnel services had been placed under the purview of the Navy; and, payroll services were placed under the Navy payroll office, by mid-2003.

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I want to extend my congratulations to you, the leadership and the faculty at the Uniformed Services University for your *exemplary performance in receiving a ten-year accreditation with commendation from the Middle States Commission on Higher Education*. This is a notable achievement and it reflects a successful, long-term commitment to the highest levels of professional medical education for this Nation's Military Health System. The quality of your graduates continues to serve as a testament to the quality of the teaching that was endorsed by the Middle States Commission. You and your staff continue to make significant contributions to our Nation's military readiness and our national medical preparedness.

- **The Honorable William Winkenwerder, Jr., M.D., Assistant Secretary of Defense, Health Affairs,** Letter to the USU President, dated July 22, 2003.

A Strengthened Relationship Between USU and DoD. The evolving relationship between the USU and DoD, from 1991, through 2003, has proven beneficial to the University and the MHS. This new relationship has clarified and strengthened the position of the University, within the entire DoD structure. The expansion of the oversight role of the Executive Committee (the three military Surgeons General) over USU has proven to be quite positive in terms of strategically identifying the ever-changing requirements of the MHS and evaluating how USU is currently meeting the needs of its primary customers, the Surgeons General. One example of the successful relationship of USU with the Surgeons General and OSD was evidenced by the presentation of the *Joint Meritorious Unit Award* by the **Honorable William S. Cohen, the Secretary of Defense,** to the University, on December 11, 2000. In addition, on March 22, 2001, the **Honorable Donald Rumsfeld, the current Secretary of Defense**, also confirmed his on-going support for the critical mission of the University, when he wrote to the Chairman of the USU Board of Regents and stated that: **The Department takes great pride in the fact that the USUHS graduates have become the *backbone* for our Military Health System. The training they receive in combat and peacetime medicine is essential to providing superior force health protection... All of us in the Office of the Secretary of Defense place great emphasis on the retention of quality physicians in the military. The USUHS ensures those goals are met.**

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USU BOARD OF REGENTS.

In terms of contributions provided during the conflict (in Iraq)**, upwards of 100 of our physician graduates served with distinction in the war. Their efforts ranged from providing frontline trauma surgery for coalition forces to caring for sick and injured Iraqi citizens and enemy prisoners of war. Alumni of the Graduate School of Nursing served as in-theater nurse-anesthetists and nurse-practitioners, as well as aboard the *USNS COMFORT*. Additional physician and nurse alumni provided rear echelon support throughout the medical evacuation system, including the critical care air transport systems and Landstuhl Regional Medical Center as well as stateside Army and Navy hospitals. Some of their efforts have been recounted in national and local newspapers and by radio and television stations, including the Washington Post, New York Times, Baltimore Sun, Wall Street Journal, Stars & Stripes, Los Angeles Times, Charlotte Observer, USA Today, Miami Herald, National Public Radio, and ABC-TV.**

In terms of mission-oriented research, Dr. Hansan Alam, a University trauma surgeon, and his research team have evaluated a number of agents to control bleeding from wounds on the battlefield by medics and "buddy-care." This work led to the development and fielding of a new aid bag that includes "QuikClot." Fifteen thousand of these bags were issued to Marines fighting the war in Iraq.

- **USU Board of Regents 2003 Annual Report to the Secretary of Defense,** Cover Letter to the Secretary of Defense, June 30, 2003.

Membership of the Board of Regents. The USU Board of Regents (BOR) is an advisory committee governed by the Federal Advisory Committee Act (Public Law 92-463, Section 1), the General Services Administration Final Rule (41 C.F.R. Part 101-6), and Department of Defense Directive 5105.45. The nine members of the Board are distinguished academics, educators, health care providers and public servants; and, they are Presidential appointees confirmed by the United States Senate. As of April 2004, the USU BOR includes the following individuals: **Everett Alvarez, Jr., J.D., Chair**; **Linda J. Stierle, MSN, RN, CNAA, Vice Chair**; **Otis Webb Brawley, M.D.**; **L.D. Britt, M.D.**; **William C. De La Pena, M.D.**; **Sharon A. Falkenheimer, M.D.**; **Ikram U. Khan, M.D.**; **Vinicio E. Madrigal, M.D.**; and, **Lawrence C. Mohr, Jr., M.D.**

Newly Appointed Members of the BOR.

Sharon A. Falkenheimer, M.D., was confirmed by the United States Senate to be a Member of the USU Board of Regents on May 1, 2003; she was sworn in as a Regent on May 16, 2003. Doctor Falkenheimer is the President of Bioethics & Medicine, Inc., in San Antonio, Texas, and was recently appointed by the Secretary of Health and Human Services to serve on the Advisory Committee to the National Center for Environmental Health of the Centers for Disease Control. She also holds academic

appointments in the Department of Preventive Medicine and Community Health at the University of Texas Medical Branch in Galveston, and in the Department of Medical Humanities and Ethics at the University of Texas Health Science Center in San Antonio. Doctor Falkenheimer received her Doctor of Medicine Degree from the State University of New York Upstate Medical College and also holds Masters Degrees in Public Health and Bioethics. She is a retired United States Air Force Colonel, with over 26 years of service, and a graduate of the United States Air Force Academic Instructor School, the Air Command and Staff College, and the Air War College. During her career, Doctor Falkenheimer served in a variety of roles, including the Associate Residency Director for the United States Air Force Residency in Aerospace Medicine and the Director of International Medical Training at the United States Air Force School of Aerospace Medicine. Doctor Falkenheimer is a Fellow of the Aerospace Medical Association, an Academician in the International Academy of Aviation and Space Medicine, and a Fellow of the Center for Bioethics and Human Dignity.

Lawrence C. Mohr, Jr., M.D., was confirmed by the United States Senate to be a member of the USU Board of Regents on May 1, 2003; he was sworn in as a Regent on May 16, 2003. A White House Physician from 1987 to 1993, Doctor Mohr is currently a Professor of Medicine and Director of the Environmental Biosciences Program at the Medical University of South Carolina. Prior to his medical career, Doctor Mohr served as a field artillery officer in the United States Army. He retired with the rank of Colonel; and, his military decorations include the Defense Distinguished Service Medal, the Silver Star Medal, four awards of the Bronze Star Medal with two "V" devices for heroism in ground combat, the Purple Heart, two awards of the Meritorious Service Medal, the Air Medal, two awards of the Army Commendation Medal, the National Defense Service Medal, the Vietnam Service Medal, and the Republic of Vietnam Campaign Medal. Doctor Mohr received his Doctor of Medicine Degree from the University of North Carolina School of Medicine. His postdoctoral training took place at the Walter Reed Army Medical Center in Washington, D.C. Doctor Mohr has served on numerous government, scientific, and professional boards and committees. He lectures both nationally and internationally, has authored multiple scientific publications, and has edited two books: International Case Studies in Risk Assessment and Management and Biomarkers: Medical and Workplace Applications.

Ex Officio Members of the Board. In addition to the nine White House appointed members, the Board also has six *ex officio* members. These include: 1) **William Winkenwerder, Jr., M.D., M.B.A.**, the Assistant Secretary of Defense for Health Affairs; 2) **Vice Admiral Richard H. Carmona, M.D.,** United States Public Health Service, The Surgeon General of the United States; 3) **Lieutenant General James B. Peake**, the Surgeon General of the United States Army; 4) **Vice Admiral Michael L. Cowan**, the Surgeon General of the United States Navy; 5) **Lieutenant General George P. Taylor, Jr.**, the Surgeon General of the United States Air Force; and, 6) **James A. Zimble, M.D., Vice Admiral, USN (Retired),** the President of USU (who serves as a non-voting member).

Advisors to the Board. **General Thomas R. Morgan, USMC (Retired)**, the former Assistant Commandant of the Marine Corps, serves as the Military Advisor to the Board. There are eight additional advisors to the Board: 1) the Dean, School of Medicine; 2) the Dean, Graduate School of Nursing; 3) the Commander, Wilford Hall Medical Center; 4) the Commanding General, North Atlantic Regional Medical Command and Walter Reed Army Medical Center; 5) the Commander, National Naval Medical

Center; 6) the Commander, Malcolm Grow Air Force Medical Center; 7) the Commander, Walter Reed Army Health Care System; and, 8) the Commander, Defense Medical Readiness Training Institute, in San Antonio, Texas.

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Students must evolve from naive college seniors to highly competent physicians whom we can trust to take care of our families and ourselves. This transformation requires the highest form of education; these educators must be scholars.

Scholars do much more than teach facts from a textbook; they must inspire, they must teach students how to continue learning for the rest of their careers, they must implant inquisitiveness and teach the requisite tools of how to ask and answer questions of human life. Scholars must be near perfect role models. To be able to accomplish these critical tasks, scholars must practice scholarship. Scholarship encompasses: 1) discovery, 2) integration, 3) application, and 4) teaching. Scholars unable to discover, to integrate, and to apply new knowledge cannot effectively teach these young people how to become physicians. This principle has been the basic tenet of medical teaching since the Flexnarian Revolution nearly a century ago. It is how and why US medicine has become dominant in the world.

Among America's 126 medical schools, USU has a mission unlike any other. Medical education in other schools focuses on the individual down to their subcellular components. This purview is only a subset of the USU perspective. In support of the warfighter, USU must take a worldwide view to include preventive medicine and atypical medical care. Since US forces are expected to be deployed in every geographic and climatic region in the world, USU prepares its students for any and all circumstances.

Unlike most universities, USU encompasses a strong division of public health within the School of Medicine that gives our physician graduates a community perspective. Thus, in a single school, USU provides a medical education at the level of the molecule, the individual, the community, and the world. This all-inclusive approach meshes with the primary reason for USU's existence: to prepare career military medical officers for leadership roles in worldwide service.

- **USU Board of Regents 2003 Annual Report to the Secretary of Defense,** June 30, 2003, Pages 1-2.

The Board's Significant Role in Academic Affairs. The BOR has continuously played a prominent role in academic affairs at the University. Faculty appointments, promotions and organization, awarding of degrees, curriculum design and implementation, academic requirements for admission and graduation, and related matters vital to the academic well being of the University are all included in the definition of *academic affairs* as provided by DoD Directive 5105.45. The Directive clarifies it is DoD policy that **...consistent with the performance of the DoD mission and with established practices covering academic independence and integrity in the fields of medical and health sciences**

education, the Department of Defense recognizes the unique role of the USUHS Board of Regents in advising the Secretary of Defense. The Assistant Secretary of Defense for Health Affairs, the USUHS Executive Committee, and the President of the USUHS will be guided by the advice of the USUHS Board of Regents on academic affairs.

The Board's Duties Include the Final Review of Candidates for the USU President Prior to Selection by the Secretary of Defense.

University Presidents:

Anthony R. Curreri, M.D., was appointed by **President Nixon,** in 1974; he retired in 1976;

The Honorable David Packard, Acting President, served from November of 1976 through May 29, 1981;

Jay P. Sanford, M.D., served, as President, from May of 1981, through November 17, 1990; and,

James A. Zimble, M.D., has served since July 15, 1991, to the present.

The BOR also Reviews the Final Selections for the Deans of the School of Medicine and the Graduate School of Nursing Prior to their Selection by the USU President.

School of Medicine Deans:

Jay P. Sanford, M.D., was appointed as the first Dean, SOM, in May of 1975; he served, as Dean, through November 17, 1990;

Harry C. Holloway, M.D., served as the **Deputy Dean** from July 9, 1990 through June of 1992;

Nancy E. Gary, M.D., was appointed as Dean on June 28, 1992; she served, as Dean, through June of 1995;

Val G. Hemming, M.D., served as Interim Dean from July 2, 1995 through May 2, 1996; following a national search, he served, as Dean, from May 3, 1996 through May 19, 2002; and,

Larry W. Laughlin, M.D., Ph.D., was appointed as Dean on May 20, 2002, and continues to serve in that position.

Graduate School of Nursing Deans:

Faye G. Abdellah, Ed.D., Sc.D., RN, served as Acting Dean following the establishment of the GSN in 1993; following a national search, she was selected as Founding Dean, GSN, serving from May 17, 1996 through May 31, 2002; and,

Patricia A. Hinton Walker, Ph.D., RN, FAAN, was appointed as Dean on June 1, 2002, and continues to serve in that position.

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The Board's Mission and Responsibilities. The Board's principal mission is to assure compliance with the University's accrediting authorities. The Regents approve academic titles for military and civilian members of the faculty. Additionally, upon the recommendation of the University's faculty and Deans, the Regents approve the granting of appropriate academic degrees to successful candidates. The BOR recommends the establishment of postdoctoral and postgraduate programs, technological institutes, and programs in continuing medical education for military members of the health professions. The Regents also recommend reciprocal education and research programs with foreign military medical schools. And, the BOR is significantly involved with the University's strategic planning process. On April 4, 1999, the BOR's Charter, which outlines the mission, membership, duties and responsibilities of the BOR, was revised and approved by the Office of the Secretary of Defense (OSD); the most current edition of the BOR's Charter is dated April 4, 2003. In addition, the Bylaws of the Board of Regents were updated and approved on February 6, 2001. (Copies of the BOR Charter and Bylaws are at Appendix A.)

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Research is a critical tool in medical school education for it provides the foundation for scholarship among both faculty and students. It is the tool that distinguishes well-trained, capable faculty with an up-to-date understanding of emerging issues and techniques from those who are not. In addition, research provides a critical, objective criterion to acknowledge, support and reward faculty who maintain their expertise while pressing for significant new discoveries to better educate the next generation of young physicians/ scientists.

From a University standpoint, research opportunities and putative collaborations constitute the prime attractant in recruiting and retaining outstanding faculty. They provide faculty and students the opportunity to engage in state-of-the-art science and also aid the University in maintaining its reputation and influence in emerging areas. The environment at USU also focuses the faculty on research questions specific to military health care.

Excellence in research helps to maintain and extend USU's position within the community of military-specific research investigators. Efforts in basic research on emerging issues in the protection of the warfighter also aid in preparing our medical students to integrate the

new challenges they will face in practice. Support of basic research in the protection and health promotion for military members, dependents, and veterans provides a university setting where researchers from several institutions can develop multi-disciplinary projects, which promote USU's status and influence among its peers. It also enhances the University's status in the general scientific community. Altogether, these challenges greatly improve the recruitment of students as well as faculty.

- **USU Board of Regents 2003 Annual Report to the Secretary of Defense,** June 30, 2003, Pages 2-3.

The Board's Seventh Annual Report to the Secretary of Defense. Since 1997, the USU Board of Regents has submitted an annual report to the Secretary of Defense. This report partially fulfills the Board's obligation to advise the Secretary on the University's operation and often focuses on contributions that USU makes to the Department of Defense. The 2003 Annual Report, surveyed the University's research enterprise and provided information covering the following areas: the unique perspective of USU in military medicine; the critical nature of research; research challenges in bioterrorism (*i.e., USU's leadership role in the unification of its Middle Atlantic partners (Health and Human Services Region III) in the successful submission of a Center Grant Application to the National Institutes of Health*); USU research programs (*i.e., hundreds of active protocols at USU with four broad categories of research: basic, clinical, public health, and nursing*); and, the USU research emphasis on interdisciplinary programs (*i.e., infectious diseases and tropical medicine; casualty care and operational medicine; behavioral and neurosciences; and, molecular and cell biology and genetics*).

(*The University's research activities are discussed under RESEARCH ADMINISTRATION, which follows in this section of the Journal.*)

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STRATEGIC PLANNING

A Perpetual Work-In-Progress. The USU Strategic Plan has been continuously evolving to reflect the changing requirements of the Strategic Plan of the Military Health System (MHS), which, in turn, is also linked with the Strategic Plans of the University's primary customers, the Surgeons General of the Army, Navy, and Air Force.

All Proposals for Funding Must Tie Into the USU Strategic Plan. Beginning with the USU Strategic Planning Process, initiated during 1991, an increasingly systematic approach has been developed for setting the University's priorities and allocating resources based upon relevance to the USU Strategic Plan. *USU activity leaders must show a direct relationship with the current USU Strategic Plan when submitting their written requests for future budgets*. Thus, a formal process has evolved for identifying program needs and for the submission of budget requests. Involvement of USU administration, faculty, and staff at both the formal and informal levels of the decision-making process assists in the equitable and ***mission-focused allocation of resources*** throughout the University's wide range of activities. The USU Strategic Plan is also used to develop the University's annual Program Objective Memorandum (POM) submission. The POM request, covering a five to six year timeframe, is submitted to the Department of Defense, through the Office of the Navy Surgeon General, in order to gain the necessary funds for the USU budget as part of the Defense Health Program.

Strategic Planning Initiatives from 1998 through 2003. During 1998, the University updated the basic objectives under each of the goals of its Strategic Plan. Then, during 1999 through 2000, metrics or performance measurements were established and monitored for each objective. Next, to ensure that the USU Strategic Plan was accurately reflecting the evolving requirements of the MHS, on April 25-27, 2001, the senior staff of USU, representatives from the teaching hospitals, the Chair of the BOR, and senior staff from the offices of the Surgeons General met to participate in a three-day strategic planning session. The purpose of the retreat was to review and update the goals and objectives of the USU Strategic Plan so that they would appropriately reflect the current requirements of the MHS. Reference materials included the Strategic Plans of Health Affairs in the Office of the Secretary of Defense and the Surgeons General, the USU Strategic Plan, and survey results as they were recorded during the initial group discussions.

Through group interaction, the attendees of the 2001 retreat reviewed USU's internal and external customers and stakeholders. Then, the concerns of those stakeholders were identified, discussed, and weighted during an analysis of the strengths, weaknesses, opportunities, and challenges existing within USU's environment. Following those discussions, *seven strategic issues were identified: marketing; resources; people; USU as a strong advocate for the MHS direct care mission; education/research/ partnerships; strategic thinking; and, communication*. Those seven strategic issues were carefully developed into seven strategic goals with forty-one objectives. Next, 22 of the most significant objectives were prioritized for initial implementation and action. At the conclusion of the 2001 strategic planning session, the focus of the University's mission statement was reviewed to identify a shorter, yet accurate reflection of the University's purpose and future focus; the attendees agreed on the following: ***Learning to Care for Those in Harm's Way.***

Goal Champions were appointed to oversee the development and implementation of the actions required to accomplish the objectives and ultimate realization of each of the seven goals. Finally, the attendees designated Team Leaders to develop action plans for accomplishing one, or more, of the prioritized objectives; and, teams were formed to work on the selected objectives. Throughout 2001 and 2002, the staff, faculty, and students of the University continued their efforts to meet the goals and objectives of the 2001-2002 USU Strategic Plan. Individual progress reports on each of the seven goals were provided to the USU President who forwarded them to the USU Board of Regents. Over 250 members of the USU Community developed and implemented strategies under the seven goals and forty-one objectives as the University continued to focus on its mission statement - ***Learning to Care for Those in Harm's Way***.

In December of 2002, the senior staff of USU, representatives from the Offices of the Surgeons General and the military teaching hospitals, the Chair of the BOR, and the USU Faculty Senate participated in a retreat to revise and update the 2001-2002 Strategic Plan. The group identified current issues facing the Nation and the University's stakeholders and realigned USU's resources and strategic goals and objectives to better meet the evolving requirements of military medicine. Five new goals (***Education***; ***Military Service***; ***Research***; ***Leadership***; and, ***Stewardship***) and 24 objectives were identified. To ensure that relevant objectives were retained from the 2001-2002 Strategic Plan, a working group was selected to integrate significant objectives into the new plan. **James G. Smirniotopoulos, M.D., Professor and Chair, USU SOM Department of Radiology and Radiological Sciences,** volunteered to lead the initiative to formalize the 2003-2004 Strategic Plan; the on-going process includes expanded faculty involvement in the development of the strategies. During May of 2003, the USU Board of Regents (BOR) voted to accept the newly designed USU Strategic Plan. As of May 2004, the following tasks have been accomplished: 1) establishment of a web site for the USU Strategic Plan <*http://www.usuhs.mil/strat/index.html*>; 2) reconciliation of the new USU Strategic Plan with the 2001-2002 Strategic Plan; 3) alignment of the new USU Strategic Plan with the Strategic Plan of Health Affairs in the Office of the Secretary of Defense; 4) finalization of priorities and the wording for the strategic goals; 5) presentation of the current plan to the University and Henry M. Jackson Foundation leadership; 6) selection of goal champions; and, 7) presentation to the USU Administrative Officers and the Faculty Senate. To date, the goal champions are responding to comments from the University community, refining their objectives, and developing strategies and metrics. (The current USU Strategic Plan is at Appendix B.)

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Progress Toward Achieving the University's Five Strategic Goals during 2003. *As the strategic planning process evolved, during 2003, the USU community incorporated the five strategic goals and 24 objectives into its on-going efforts to meet its mission and respond to the requirements of the MHS. The following are examples of selected issues and accomplishments, which addressed the University's five strategic goals, during 2003.*

GOAL 1: EDUCATION: To meet the Nation's needs as the preferred source for uniformed health care education and training.

OBJECTIVE - USU will provide outstanding education to its students, focused on military readiness and homeland defense.

USU Has World-Wide Recognition as the One Place Where Physicians Are Trained to Respond to Weapons of Mass Destruction.

USUHS graduates are exceeding the original expectations of Congress when the University was established, thus ensuring physician continuity and leadership for the Military Health System. The USUHS-unique training centered in preventive medicine and combat-related health care is essential to providing superior force health protection and improving the quality of life for our service members, retirees, and families. USUHS also provides a significant national service through its continuing medical education courses for military physicians (and advanced practice nurses) **in combat casualty care, tropical medicine, combat stress, disaster medicine, and the medical response to weapons of mass destruction (WMD).**

The military unique curricula and programs of the Uniformed Services University, successfully grounded in a multi-Service environment, draw upon lessons learned during past and present-day combat and casualty care to produce career-oriented physicians, advanced practice nurses and scientists with military unique expertise.

- **Vice Admiral Michael L. Cowan, Surgeon General of the Navy,** Testimony before the Senate Appropriations Committee, Subcommittee on Defense Health, April 30, 2003.

For over 25 years, USU has been at the forefront of weapons of mass destruction (WMD)-related medical education. The University has successfully prepared its uniformed graduates to provide military-unique health care and expertise in austere conditions and to respond to injuries caused by chemical, biological, radiological, nuclear, and explosive (CBRNE) weapons. Where the average school of medicine (SOM) in the United States offers 13 hours of preventive medicine training, the USU SOM provides 130 contact hours; while the DoD scholarship physicians receive between 50 to 132 hours of

medical readiness training, the USU SOM students receive between 784 and 889 hours. A military-unique focus and operational training exercises are interwoven throughout the SOM curriculum; as a result, career-committed USU graduates with their military-unique education and extraordinary retention rates are providing quality care, continuity, and leadership throughout the Uniformed Services. ***The Association of American Medical Colleges Reporter has twice featured USU as the one place where physicians are trained for the medical response to WMD in its December issues of 1998 and 2001***. In addition, during 2003, the Medical Staff at the White House, the Congress of the United States, the Chairman of the Joint Chiefs of Staff, the USU Executive Agent (the Navy Surgeon General), and the USU Board of Regents have continuously validated USU's long-standing expertise in WMD-related training and expertise. (*See MILITARY UNIQUE CURRICULUM in Section II of the Journal for breakout by Academic Year*.)

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OBJECTIVE - USU will coordinate with other agencies to develop and conduct specialized training for health care professionals (to include: 1) disaster and humanitarian relief; 2) weapons of mass destruction; 3) traumatic and post-traumatic stress; 4) preventive medicine for mission readiness; and, 5) force health protection and healthy lifestyles).

USU Programs Are Collaborating Throughout DoD and Other Federal Agencies in WMD-Related Areas of Expertise.

Four USUHS activities, internationally recognized by the emergency responder and health care communities, stand by ready to provide cost-effective, quality-assured WMD-related training and consultation. The USUHS Casualty Care Research Center (CCRC)**, the Center for Disaster and Humanitarian Assistance Medicine** (CDHAM)**, the Center for the Study of Traumatic Stress** (CSTS)**, and the Armed Forces Radiobiology Research Institute** (AFRRI) **have established credibility in providing military unique expertise covering four areas of WMD-related concerns: 1) the preparation of emergency responder communities; 2) ensuring communication and assessment of military medical humanitarian assistance training; 3) addressing traumatic stress of both civilian and uniformed communities during WMD-related incidents; and, 4) the development of medical radiological countermeasures to include the provision of unique training for the response to radiological emergencies.**

- **Vice Admiral Michael L. Cowan, Surgeon General of the Navy,** Testimony before the Senate Appropriations Committee, Subcommittee on Defense Health, April 30, 2003.

USU Casualty Care Research Center. The USU Casualty Care Research Center (CCRC) was established in 1989, under the USU SOM Department of Military and Emergency Medicine, as a center of excellence for injury control and casualty care research. The location of the CCRC within the

multi-Service environment of USU, with its emphasis on education and development, scientific studies, research, and on-going clinical and operational practice, is critical to the development and sustainment of the CCRC's ability to maintain its core competency - *the capability to provide military unique medical expertise and experience required by both uniformed and civilian emergency/health care responders to weapons of mass destruction (WMD)-related and other national security contingencies*. Only DoD has a self-renewing source of physicians and other medical personnel with interest and experience in these areas; USU, through its students in the School of Medicine and the Graduate Education Programs, and its career-focused faculty and staff, plays a vital role for the DoD in the renewal process of militarily-focused and experienced health care providers. The University ensures continuity and leadership for the Military Health System; and, the CCRC's core competency plays an essential role in that equation. ***Since its establishment, the CCRC has successfully served as a bridge between DoD and Civilian Emergency Responders for the coordination and sharing of critical, military-unique medical knowledge, technology, and expertise.*** The CCRC is focused on the crisis management response to: *weapons of mass destruction; counter terrorism; protective operations; hostage rescue; explosive ordnance disposal; maritime operations; civil disorder; and, major national security events*. ***To date, this CCRC Program has trained over 6,000 civilian emergency personnel from 750 agencies through collaborative support agreements with law enforcement organizations from all 50 States, the District of Columbia, Guam, Puerto Rico, the United States Virgin Islands, England, Denmark, and Canada.*** Forty local, State, and Federal law enforcement agencies mandate this CCRC certification-based training as a condition of employment for their SWAT medics. Skills are taught that reduce the risk of death or serious injury during counter terrorist operations, drug raids, hostage situations, and other high risk operations for DoD personnel and, on a reimbursable basis, for personnel from other Federal, State, and local agencies. In October of 2002, ***the Secretary of Defense recognized the exemplary response by CCRC to the terrorist attacks on September 11th, when he awarded the Exceptional Civilian Service Award and the Secretary of Defense Meritorious Civilian Service Award to several CCRC personnel***. The CCRC was also recognized on February 28, 2003, when ***the Honorable Gail Norton, Secretary of the Interior, presented a Unit Citation Award to the CCRC in recognition of critical support provided to the United States Park Police on September 11, 2001***.

USU Center for Disaster and Humanitarian Assistance Medicine. Established during 1998, under the USU SOM Department of Military and Emergency Medicine, the USU Center for Disaster and Humanitarian Assistance Medicine (CDHAM) uses training, technology, and best management practices to improve military medical capabilities and readiness during disaster and humanitarian contingencies, especially through collaboration within the DoD, the international medical community, and the host nation medical infrastructure and beneficiary populations. The CDHAM works closely with the Unified Combatant Commands to meet its primary mission. Such efforts generally involve direct liaison with other DoD humanitarian assistance centers to include: the Center of Excellence (COE) for Disaster Management and Humanitarian Assistance under the United States Pacific Command (USPACOM) located in Honolulu, Hawaii; and, the Center for Disaster Management and Humanitarian Assistance (CDMHA) under the United States Southern Command (USSOUTHCOM), located in Miami, Florida. In conducting studies and operations concerning local and global relief efforts, the CDHAM also works to expand relationships with other Federal agencies such as the Office of Foreign Disaster Assistance (OFDA) and the United States Agency for International Development (USAID), as well as international organizations such as the Pan American Health Organization (PAHO) and the World Health Organization (WHO). During 2003, CDHAM was actively engaged in various studies supported by the Department

of Defense, the Unified Combatant Commanders, and other Federal agencies. ***For example, in 2002, the CDHAM produced a series of nine reports examining the training value of medical humanitarian assistance projects and their effectiveness for beneficiaries. To ensure the greatest exposure to military planners and decision-makers, during 2003, the nine reports from the study were published in booklet form and distributed widely among the DoD, the Unified Combatant Commands, and various offices concerned with humanitarian assistance and disaster response planning and execution***. For greater visibility, two additional formats were also provided: a CD-ROM was developed containing a description of the CDHAM's mission and activities that has hot-links to all nine reports, available in *Adobe Acrobat*. The CD-ROM was distributed to the same distribution list utilized for the booklets described above; links to the *Adobe Acrobat* report files are also available through the CDHAM home page at <*www.cdham.org*>. In December of 2003, a peer-reviewed version of the summary report entitled, *Overview of Overseas Humanitarian, Disaster and Civic Aid Programs*, was also published in Military Medicine, 168, 12:975-980, 2003.

USU Center for the Study of Traumatic Stress. The last quarter of 2001 validated the *reason d'etre* of the USU Center for the Study of Traumatic Stress (CSTS), when military unique expertise in disaster mental health and trauma research in terrorism and bioterrorism were recognized as being essential to national security. Federal and State leaders, as well as the public health and mental health care systems, teaching institutions, and media outlets were seeking to understand the traumatic impact of *9/11*, the anthrax attacks, and the traumatic anxiety generated by those events. CSTS quickly assumed a leadership position in responding to those contingencies and in advising Federal and State leaders on recovery and resiliency; CSTS sustained its critical support throughout 2002 and 2003 in the form of education, training conferences, research, and published work addressing population-based trauma. Today, CSTS is well positioned within the Military Health System and continues to increase the military's medical knowledge (in the areas of epidemiology, psychology, neurobiology, health care systems and treatment) of the consequences of bioterrorism, trauma, and disaster and to apply that knowledge in addressing the real world problems, issues, and requirements of homeland defense, the response to terrorism and disaster, and humanitarian assistance. Currently, the Center's basic computer data base (accessible at <*http://www.usuhs.mil/psy/disasterresources.html*> or <*http://www.usuhs.mil/psy/traumaticstress/newcenter.html*>) provides over 17,000 articles of relevance to traumatic stress. It is this data base that enabled the CSTS to effectively respond, throughout 2002 and 2003, to the traumatic stress resulting from the terrorist acts of war against our Nation. ***By the end of 2003, CSTS leadership had been instrumental in developing and advancing a national strategy that integrates mental health into a public health paradigm for terrorism management and response***; this occurred through the collaborative efforts and military unique expertise of the CSTS Director, who served as a participating member on the Institute of Medicine Committee on Responding to the Psychological Consequences of Terrorism. This new model is of substantial consequence as it demonstrates how ***disaster psychiatry***, a singular specialty significantly contributed through the forging of military medicine and USU faculty health care leaders in the 1980's, ***has become a recognized, valued and integral component for strengthening homeland security in the 21st Century***.

The Armed Forces Radiobiology Research Institute.

I want to thank you personally for the help we at CIA have received from AFRRI. CIA has been committed to ensuring the safety of our mail and AFRRI has been absolutely essential in our efforts. (AFRRI researchers have established a standard dosage of radiation necessary to eradicate anthrax spores; the researchers use a harmless surrogate spore that mimics the biological properties of live anthrax spores. This non-toxic spore can easily be placed in an envelope, and then tested, after irradiation procedures, at a specific mailing distribution area; the spore allows extensive testing for quality assurance to ensure the safety of those individuals who will handle the mail.) **The assessment of the effectiveness of our mail treatment processes would be impossible without your help.**

- **Dr. Brian Hollibush, Environmental Health and Preventive Medicine Officer, Central Intelligence Agency,** Letter to the Director of AFRRI, May 8, 2002.

Established as a TriService organization in 1961, and transferred to USU for management oversight in 1992, ***only the Armed Forces Radiobiology Research Institute (AFRRI) offers a program dedicated to comprehensive, militarily relevant radiobiological research to address the spectrum of radiological injuries anticipated under combat situations involving the use of nuclear or radiological weapons; no other program within the DoD addresses medical radiological defense research requirements***. In meeting its mission, AFRRI must: 1) conduct applied radiobiological research to develop militarily relevant medical countermeasures against radiation injuries; 2) maintain a Medical Radiobiology Advisory Team to support accidental or premeditated events involving nuclear weapons, nuclear reactors, radiological dispersal devices, or other nuclear/radiological situations; 3) advise the Joint Chiefs of Staff (J-4 Medical); the Deputy Assistant to the Secretary of Defense, Nuclear Matters; the Joint Forces Command; and, the Surgeons reporting to the Combatant Commanders on medical nuclear defense; and, 4) train DoD medical personnel on the management and treatment of radiation casualties (accomplished through the internationally recognized *Medical Effects of Ionizing Radiation (MEIR) Course*). The AFRRI complex was designed and built to conduct radiobiology research and to develop medical radiological countermeasures in support of the military medical mission; ***only the AFRRI TRIGA nuclear reactor is designed for, and is wholly dedicated to, applied medical radiobiology research for medical readiness***. Today, the military has a clear need for information on the sources and complicating effects of radiation. AFRRI routinely disseminates its research findings with the scientific community, within DoD, the private sector, and internationally. Its investigators' publications in peer-reviewed journals, presentations at professional conferences, and reports and recommendations to the TriServices and the Surgeons of the Combatant Commands provide timely information on the mitigation of radiation hazards and optimization of medical treatment strategies for radiation casualties. ***Selected examples of organizations, for which AFRRI has provided recent support include*:** the National Pharmaceutical Stockpile Program; the Interagency Working Group on Test Methods and Surrogates for *Bacillus anthracis*; the European Union on Medical Preparedness for Nuclear/Radiological Events; the Centers for Disease Control and Prevention; the Combatant Commander, United States Southern Command; the Department of State; the President's Science Advisor and the Office of Science and Technology Policy; National Guard Civil Support Teams; the Offices of the President and Vice President

of the United States; the United States Forces Command; the Secretary of Defense; the German Ministry of Defense; and, the Tokaimura Prefecture Emergency Operations Center, in Japan.

(*See Section II, MILITARY UNIQUE CURRICULUM and RESEARCH CENTERS AND PROGRAMS, for further information on CDHAM, CCRC, and, CSTS; AFRRI is described in Section VII of the Journal*).

USU, the Academic Center for Military Medicine, Provides Specialized Training for the Military Health System.

> **USU's Public Health Program, with its emphasis on community health, ranks sixth in the Nation according to U.S. News & World Report's *2004 Rankings of America's Best Graduate Schools*... USU's program ranked just below Tufts University, the Medical College of Wisconsin, Northwestern University, Oregon State University and the University of Rochester on the list of the top 10 community health master or doctorate programs.**
>
> - USU Medicine, *U.S. News & World Report Ranks USU Graduate Programs in Top Six*, Fall 2003, page 5.

During 2003, the University continued to serve as the Academic Center for Military Medicine for the 2,864 uniformed, off-campus USU faculty, who are located throughout the Military Health System (MHS). Through its continuing medical education programs and academic centers, the University presented military-relevant conferences and continued its collaborative efforts for the MHS. ***The following is a selected example of the superb response of the USU Educational Programs to the special needs of the Uniformed Services***.

The USU SOM Graduate Education Programs in Preventive Medicine and Public Health Rank 6th in the Nation. Throughout 2003, the USU School of Medicine (SOM) Preventive Medicine and Biometrics (PMB) Graduate Programs continued on-going collaborative educational agreements with the Walter Reed Army Medical Center Preventive Medicine Residency Program and Internal Medicine Fellowship Program, the Army Program for Training in Health Services Administration, the United States Army and the United States Public Health Service Laboratory Animal Medicine Program, the Navy Dental Research Institute Program in Dental Public Health, and the Indian Health Service Environmental Health Training Program. In addition, the PMB Department is affiliated with the United States Army and Navy Biomedical Research Laboratories located in: Bangkok, Thailand; Rio de Janeiro, Brazil; Nairobi, Kenya; Cairo, Egypt; Jakarta, Indonesia; and, Lima, Peru. A research program also exists under an agreement with the Ministry of Health, in Belize. *During 2003, the USU PMB Graduate Education Programs and Courses provided outstanding responsiveness to specific requests of the Uniformed Services; selected examples follow*.

The Occupational Ergonomics Program. Recognizing the importance of occupational musculoskeletal injuries among military personnel and, in response to the Army's request for specialty training in occupational ergonomics within the USU Master of Public Health (MPH) Program, a new area of concentration was established, the Occupational Ergonomics Concentration in the PMB MPH Program. The first student entered this program in July of 2002 and graduated in June of 2003. ***The Occupational Ergonomics Program is the only established graduate-level injury prevention program in the Department of Defense.***

The International Health Specialist (IHS) Program. Numerous After-Action Reports (AARs) indicated that Humanitarian Assistance (HA) and Disaster Response (DR) missions would benefit if members of the Air Force Medical System (AFMS) received additional training. The goal of the IHS Program is to prepare regionally-focused military medical experts who can help prepare uniformed forces for operational contingencies and the global response to medical crises, during combat or peacetime deployments. ***Each graduate understands the components, operations, and financing of health delivery services and has the administrative skills to plan, analyze, manage, and improve public health programs for the Uniformed Services. The graduate also understands the role that the United States military and other organizations and agencies play in addressing global health issues***. Four students matriculated into the program during 2002; and, all four graduated in June of 2003; currently, there are four additional IHS students who are projected to graduate, in June of 2005.

The Master of Science in Public Health (MSPH) Program. USU has graduated five degree candidates between 2000 and April of 2004; during 2003, one officer graduated from the Health Physics specialty of the MSPH. Thirteen Navy, Air Force, Army, and Public Health Service officers are currently enrolled in the Environmental and Occupational Health and the Health Physics specialties in the MSPH Program; four of these students are expected to graduate, during 2004. Students in both the Ph.D. and the MSPH Programs design and conduct research with military relevance. ***Past and current projects have included the development of chemical warfare detection methods and instrumentation***. The students and program faculty work closely with the Uniformed Services and other Federal and international organizations to ***identify and address current needs of operational forces and emergency responders***.

The TriService Advanced Military Tropical Medicine Course. The PMB *TriService Advanced Military Tropical Medicine Course* has been offered at USU, beginning in 1996, through the Summer of 2003. During 2003, 71 military medical officer students were ***trained in operational military medicine, consisting of four weeks of lectures and laboratories in the advanced diagnosis and treatment of tropical diseases. Approximately 70 lecturers provided over 106.5 hours of didactic instruction. To date, over 425 students have completed the course.*** One hundred and thirteen continuing medical education hours (CME) were awarded during the past year; and, the overseas field missions were attended by 38 medical officers (El Salvador - 17; Bolivia - 8; Peru - 8; Cairo - 3; and, Thailand - 2).

The Tropical Medicine and Travelers' Health Course. The PMB *Tropical Medicine and Travelers' Health Course* is offered as a 12-week course during the Spring Quarter of the MPH Program. ***It includes lecture, seminar, laboratory and case-based curriculum approved by the American Society***

of Tropical Medicine and Hygiene and leads to eligibility for the qualifying examination in Tropical Medicine and Travelers' Health. To date, 31 uniformed medical officers and 11 civilian physicians have completed the course.

The Diagnostic Parasitology Course. The *Diagnostic Parasitology Course* is offered as a series of lectures and hands-on laboratory sessions for individuals wishing to ***study parasitic infections in humans***. Uniformed and civilian medical technologists and physicians from all parts of the world have completed this course. Participants for the course have included: United States Embassy personnel from Asian and African countries sent by the United States Department of State; members of the Peace Corps; a medical doctor from the Japan Ground Self Defense Force; and, civilians from various foreign and domestic health-related organizations. Since 1988, over 290 individuals have taken the course, to include 10 individuals who took the course, during 2003.

Critical Decision Making for Medical Executives: Keys to Improving Population Health. The *Critical Decision Making for Medical Executives: Keys to Improving Population Health Course* is a five-day training course held four times each year; it responds to the Congressional mandate that current and prospective DoD health care leaders receive training in health care management and administration. ***The focus of the course is to equip health care professionals with the knowledge and tools needed to integrate clinical and business decisions to improve health care delivery and population health. To date, 34 sessions have been held in the TRICARE Regions and approximately 950 senior officers have been trained for the MHS***. (*See Sections II, RESEARCH CENTERS AND PROGRAMS, and IV, GRADUATE EDUCATION PROGRAMS, for further information on the PMB and other Graduate Education Programs at USU*.)

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<u>OBJECTIVE</u> - USU will develop and deploy continuing health education and distance learning programs to cost-effectively enhance the competency of military health care professionals in military unique curriculum.

<u>USU Provides Nationally Recognized Continuing Education Credit</u>. The USU Office of Continuing Education for Health Professionals (CHE) provides nationally recognized continuing education credit for physicians, nurses, psychologists, health care executives, and social workers through its accreditation by: 1) the Accreditation Council for Continuing Medical Education; 2) the American Nurses Credentialing Center's Commission on Accreditation as a Provider of Continuing Education in Nursing; 3) the American Psychological Association; 4) the American College of Healthcare Executives; and, 5) the State of Maryland Department of Health and Mental Hygiene Board of Social Work Examiners. *This inclusive provision of continuing education for multiple disciplines, from one office, is believed to be unique within the Military Health System (MHS)*. During Fiscal Year 2003, to the present, there has been a marked increase in CHE's Internet activities that are focused on enhancing the competency of military health care professionals in military unique curriculum; ***the following selected examples are provided, <u>at no cost</u>, by the USU Office of CHE***.

DoD Smallpox Vaccination: Standard Training. The threat of smallpox provided the momentum for a partnership between the DoD Military Vaccine Agency (MILVAX) and USU. *DoD Smallpox Vaccination: Standard Training* consists of sessions grouped specifically for three levels of professional smallpox vaccination program responsibility. USU provides continuing education for physicians, nurses, and members of the American College of Healthcare Executives (ACHE). About 3,000 participants have successfully completed these sessions. Of these, 359 physicians, 250 nurses, and 21 ACHE members earned up to 53.5 continuing medical education (CME), 63.7 continuing nursing education (CNE), and 10.5 category II (non-ACHE) credits. This program is available at <*http://dod.digiscript.com*>.

Military Vaccine Agency (MILVAX) Spokesperson Training Course. The *Military Vaccine Agency (MILVAX) Spokesperson Training Course* started during Fiscal Year 2004. It is a condensed version of a three-day conference, which provides a variety of information related tasks regarding the Anthrax Vaccine Immunization Program (AVIP) and the Smallpox Vaccination Program (SVP), through either an administrative or clinical focus. USU provides continuing education for physicians, nurses and members of ACHE. This activity is available at <*http://dod.digiscript.com*>.

On-Line Forum for Current Advancements in Deployment Medicine. The Journal of Special Operations Medicine is a quarterly, peer-reviewed journal geared to Special Operations Forces medical professionals. Its mission is to promote the professional development of Special Operations medical personnel by providing a forum for the latest relevant advancements in deployment medicine. USU provides continuing education to health providers who read the article(s) and successfully complete the post-test(s). The Journal of Special Operations Medicine is available at <*http://www.hurlburt.af.mil/jsou*>.

(*Section VI of the Journal provides detailed information on the USU Office of Continuing Education for Health Professionals*.)

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<u>OBJECTIVE</u> - USU will ensure that all programs meet or exceed national standards for accreditation.

<u>USU Programs Receive Maximum Terms of Accreditation</u>.

I want to extend my congratulations to you, the leadership and the faculty at the Uniformed Service University for your exemplary performance in receiving a ten-year accreditation with commendation from the Middle States Commission on Higher Education. This is a notable achievement, and it reflects a successful, long-term commitment to the highest levels of professional medical education for this Nation's Military Health System. The quality of your graduates continues to serve as a testament to the quality of the teaching that was endorsed by the Middle States Commission. You and your staff continue to make significant contributions to our Nation's military readiness and our national medical preparedness.

- **The Honorable William Winkenwerder, Jr., M.D., Assistant Secretary of Defense, Health Affairs,** Letter to the USU President, July 22, 2003.

Maximum Term of Accreditation with Commendation Is Granted to USU. As described in the above quotation, the University received the maximum accreditation, with commendation, from the Middle States Commission on Higher Education, during 2003, for a period of ten years. In addition to accreditation from the Middle States Commission, the USU Office of Continuing Education for Health Professionals (CHE) ensures the University's ability to provide nationally recognized continuing education credit for physicians, nurses, psychologists, health care executives, and social workers through continued accreditation by: 1) the Accreditation Council for Continuing Medical Education; 2) the American Nurses Credentialing Center's Commission on Accreditation as a Provider of Continuing Education in Nursing; 3) the American Psychological Association; 4) the American College of Healthcare Executives; and, 5) the State of Maryland Department of Health and Mental Hygiene Board of Social Work Examiners. Also, the University maintains full accreditation from the American Association for the Accreditation of Laboratory Animal Care (AAALAC) and the Nuclear Regulatory Commission (NRC). (*See ACCREDITATION, which follows in this section of the Journal for further information*.)

Maximum Term of Accreditation Continues for the School of Medicine. The accreditation process of the Liaison Committee on Medical Education (LCME) is designed to certify that a medical program meets prescribed standards; and, by awarding accreditation, the LCME indicates confidence in the quality of the medical school program. The USU School of Medicine (SOM) received provisional accreditation from the LCME in 1976; the SOM was fully accredited in 1979, and has continuously maintained that status. Following its last accreditation process, the LCME provided official notice, on April 13, 2000, that the SOM, to include the USU SOM Graduate Education Programs, had received continued maximum accreditation for the educational program leading to the Medical Doctor Degree for a seven-year term. The next full survey will take place during the 2006-2007 Academic Year. In

its response to the 2002 SOM Progress Report, the LCME official response, dated April 6, 2002, stated the following: **The LCME has reviewed and accepted with appreciation your progress report on the documentation of the comparability of clinical educational experiences across clerkship sites... The** (USU SOM) **system in place for documentation of the comparability of clinical educational experiences is an outstanding model for other institutions to emulate**.

In addition to its inclusion in the accreditation granted to the University by the Middle States Commission on Higher Education and the SOM's accreditation by the LCME, ***the following professional organizations continue to authorize accreditation for the various programs and activities of the SOM*:** 1) the Accreditation Council for Continuing Medical Education; 2) the Council on Education for Public Health (CEPH); 3) the American Psychological Association (APA) Committee on Accreditation; and, 4) the Accreditation Board for Engineering and Technology (ABET). Also, SOM Steering Committees are actively involved with the accreditation process for two additional areas of responsibility reviewed by: 5) the American Association for the Accreditation of Laboratory Animal Care; and, 6) the Nuclear Regulatory Commission (*see Section II, ACCREDITATION, for further information relevant to the School of Medicine; and, see ACCREDITATION in Section IV for further information on the USU SOM Graduate Education Programs*).

Maximum Terms of Accreditation with Commendation Are Granted to the Graduate School of Nursing.

> **The members of the Council on Accreditation of Nurse Anesthesia Educational Programs (COA) are pleased to inform the Uniformed Services University of the Health Sciences Graduate School of Nursing Nurse Anesthesia Program... that continued accreditation has been granted... Given this action of the COA, the program will be scheduled for its next consideration of continued accreditation in the Fall of 2013... Finally, the COA would like you to know that very few programs are not required to submit progress reports following an accreditation review and even fewer programs have achieved the maximum accreditation of ten years.**
>
> - **The Council on Accreditation of Nurse Anesthesia Educational Programs (COA),** Letter to the USU GSN, October 31, 2003.

During 2002 and 2003, the USU Graduate School of Nursing (GSN) received maximum accreditation from its three accrediting entities: 1) on March 18, 2002, the University was formally notified of the action taken by the National League for Nursing Accrediting Commission (NLNAC) at its meeting held on February 27, 2002: **The Commission approved the Master Degree Program for continuing accreditation and scheduled the next evaluation visit for the Fall of 2009.** The rationale for granting accreditation for the maximum of eight years was provided in the NLNAC final report: **The Uniformed Services University of the Health Sciences GSN has met and exceeds all criteria for continuing education. This program provides an outstanding model for preparing advanced practice nurses for military service and care of patients in crises and disaster situations.**

This program is on the cutting edge of cost effectively incorporating advanced technology into the curriculum and instruction process to produce a highly competent practitioner. This program can serve as a model to advance nursing education, practice and scholarship as nursing moves into care of the global community; 2) on May 16, 2002, the USU GSN received official notification from the Commission on Collegiate Nursing Education (CCNE) that: **The CCNE Board of Commissioners acted at its meeting on April 20, 2002, to grant accreditation of the Master Degree Program in Nursing at the Uniformed Services University of the Health Sciences for a term of 10 years, extending to June 30, 2012. At its meeting the CCNE Board determined that the program met all four accreditation standards. The Board additionally determined that there are no compliance concerns with respect to the key elements**; and, 3) on October 31, 2003, USU received notification that the Nurse Anesthesia Program had been awarded a ten-year accreditation as the very first program in the Nation re-accredited under the new standards and the first to be granted the maximum ten-year re-accreditation. In the above-cited quotation, the COA commended the University for its excellent program and noted zero critical weaknesses (*see ACCREDITATION, in Section III, for further information*).

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GOAL 2: MILITARY SERVICE: To provide graduates, faculty, and staff who serve as experts in the medical response to Disasters, War, and Humanitarian Crises.

***OBJECTIVE* - *Produce skilled professionals with special orientation in those aspects of medicine, science, and nursing to support the Military and Federal Health Care Systems*.**

USU Graduates Provide Military-Unique Expertise and Present Clinical Skills Required for MHS Residency Programs and Certification Examinations.

School of Medicine Alumni.

As the Executive Agent of the Uniformed Services University of the Health Sciences (USUHS), I would like to comment on the extraordinary achievements of the University... USUHS SOM graduates, with retention averaging twenty years of active duty service, now represent over 22 percent of the total physician officers on active duty in the Armed Forces. USUHS graduates are exceeding the original expectations of Congress when the University was established, thus ensuring continuity and leadership for the Military Health System... The USUHS-unique training centered in preventive medicine and combat-related health care is essential to providing superior force health protection.

- **Vice Admiral Michael L. Cowan, Surgeon General of the Navy,** Testimony before the House Armed Services Committee, Subcommittee on Total Force, March 27, 2003.

Evidence of the High Quality of USU SOM Training Comes from Many Sources. Each academic year, the Association of American Medical Colleges (AAMC), with the assistance of medical school administrators, conducts a survey of graduating seniors at medical schools throughout the United States. Students are asked to rate statements that cover their entire medical school experience. Included among the numerous topics surveyed are premedical preparation, pre-clinical education, clinical experiences, student services and the overall quality of the medical education received. The USU Office of Student Affairs reported that the ratings of the Year 2003 Medical School Graduation Questionnaire show a consistently strong, positive evaluation by USU students at a level well above the all-schools comparison. *For example, 67.6 percent of the USU SOM seniors **strongly agreed** with the statement, Overall, I am satisfied with my medical education. Whereas, when averaging the replies from all responding medical schools in the United States, only 35.0 percent rated the statement as strongly agree*.

Traditionally, more than 75 percent of USU SOM graduates receive their first choice of specialty and location for their first year of residency training. The results of the 2003 Joint Service Graduate Medical Education (GME) Selection Board for the USU SOM Class of 2004 were favorable. The overall

selection rate for FIRST CHOICE programs was 77 percent; 128 out of 167 USU SOM students matched for their first choice both in specialty and training site. Seventeen additional students received their first choice in specialty for ***a resulting total of 87 percent who received first choice in specialty. Feedback obtained from residency program directors indicates that the SOM graduates are consistently recognized as well-prepared to complete graduate medical training.***

USU SOM students have consistently passed the United States Medical Licensing Examination (USMLE) Steps 1 and 2 at rates equal to, or higher than, the national average. In 1999, the National Board of Medical Examiners (NBME) began computer-based testing (CBT) for the USMLE Step 1 and 2 Examinations. The Step Examinations are administered at Prometric Testing Centers throughout the calendar year. The USUHS first-time pass average for the Step 1 Board Examination, during 2003, was 90.1 percent, which is consistent with national testing results. ***Most of the USU fourth-year students (SOM Class of 2004) completed the Step 2 CBT between July and September of 2003. The overall performance for the Class of 2004 was strong; the average score for the class was 211; and, the pass rate was 95 percent***.

An example of the critical role of USU SOM graduates in the MHS was reported to the Congress in both 2002 and 2003, when the Surgeon General of the Navy testified that the Center for Navy Analysis (CNA) had provided significant data on the retention of physicians. The Navy Surgeon General informed the Congressional Committees that his most undermanned specialties were general surgery and all surgical subspecialties, orthopedic surgery, diagnostic radiology, anesthesiology, and urology. ***Many of these specialties are critical wartime specialties and shortfalls could have a negative impact on medical readiness. Overall, the median length of non-obligated service for physician specialists averages only 4.4 years. That average drops to 2.9 years when USU graduates are excluded; the median length of non-obligated service as a specialist for USU graduates is 9 years***. Thus, the USU SOM alumni are providing essential support for medical readiness.

Following an inclusive review in 1995, the General Accounting Office (GAO) confirmed that ***43 out of 44 commanders of major military medical units perceived that physicians from the University have a greater overall understanding of the military, greater commitment to the military, better preparation for operational assignments, and better preparation for leadership roles.*** The GAO reviewers also pointed out that ***they perceive that University graduates have a better appreciation of and greater satisfaction with the physician's role within the military*** than other accession sources (General Accounting Office Report, *Military Physicians - DoD's Medical School and Scholarship Program*, September 29, 1995, page 43). ***Congressional testimony by the Surgeons General and the Office of the Assistant Secretary of Defense for Health Affairs strongly reflects that these significant findings have been validated over the past ten years***. Of significant note, included in the last part of Section II, SOM ALUMNI, under *Selected Profiles*, is a description of the conceptualization and development of Trauma Training Centers for the Armed Forces, which includes the major role of the USU SOM alumni in the initial development, subsequent implementation, and ultimate provision of leadership for the current Trauma Training Centers of the Army, Navy and Air Force. (*See ALUMNI in Section II of the Journal for further information*.)

Graduate School of Nursing Alumni.

The Federal Nursing Chiefs met with the program evaluators and gave testimony to their support of the GSN. Comments during the meeting with the Federal Chiefs included: 1) we are excited to see the quality of the students who graduate from this program... they are exceptional leaders; 2) we are directly involved in helping the School understand the type of skills graduates need and find them very responsive to our suggestions.

- **Site Surveyors from the National League for Nursing Accrediting Commission,** Final Report, November 1, 2001.

GSN Alumni Have Established Extraordinary Results on National Certification Examiniations and Performance Evaluations. The immediate measurable standard of success for the GSN alumni is the passing of the National Certification Examinations. ***Over 97 percent of the GSN graduates have passed the National Certification Examinations at the upper percentile, on their initial examinations***. For example, credentialing scoring information released on February 26, 2002, by the American Nurse Credentialing Center's Commission on Certification shows that of the 15 GSN Family Nurse Practitioner graduates who took the certification examinations, all 15 passed with a mean score of 123.3, the highest ever achieved. And, during 2003, all 10 GSN Nurse Anesthesia graduates passed the Council on Certification of Nurse Anesthetists Certification Examination on the first attempt; seven of the ten passed with perfect scores of 600.

Another short-term measure is the GSN graduate's performance as an advanced practice nurse, as determined by the graduate's immediate supervisor. One year after graduation, both the GSN alumni and their supervisors are concurrently surveyed. Immediate supervisors, familiar with the day-to-day performance of the GSN graduates, are queried regarding specific areas of the alumni's strengths and weaknesses in clinical specialty performance. This information is collated and compared to the graduates' self-performance ratings. In addition, the GSN asks its graduates to complete an end-of-program evaluation, followed by one-year and three-year (Family Nurse Practitioner only) post-graduation evaluations. Information from the surveys is tracked and trended to identify any needed revisions or additions to course or clinical content or experiences. Reviews of the end-of-program, alumni, and employer evaluation data by the GSN and the Federal Nursing Chiefs ensure that the GSN curriculum is meeting the requirements of the Uniformed Services. This process continued during 2003, with a strong overall response that reflects satisfaction with the GSN Alumni.

During 2003, two GSN Nurse Anesthesia alumni were appointed to the TriService Joint Readiness Clinical Advisory Board. **Captain Wendy Aronson, CRNA, USAF, MC, GSN Nurse Anesthesia Class of 1999,** was deployed during the past year. Setting up operations at an austere location, Captain Aronson pioneered the modification of Expeditionary Medical Support (EMEDS) supplies resulting in significant savings of compressed oxygen, a rare commodity in an austere environment. Her efforts led to Air Force-wide recognition and her appointment to the prestigious TriService Joint Readiness Clinical Advisory Board (JRCAB) at Fort Detrick, Maryland. **Major Brian Todd, CRNA, USAF, NC, GSN Nurse Anesthesia Class of 1999,** was deployed to Oman during the past year. An expert in field

equipment, he was one of the first USAF CRNAs to use specialized anesthesia equipment in an austere environment. Due to his expertise, he was also named to the JRCAB, which establishes equipment policy for the Services. (*See ALUMNI in Section III of the Journal for further information*.)

Alumni of the USU SOM Graduate Education Programs.

The graduate programs at USU are important to the University for many reasons. They help to train a cadre of well qualified, experienced biomedical scientists and public health practitioners who will continue the tradition of scientific service to the Nation in the civilian and military worlds. Strong graduate programs are important because of the major effect active graduate programs have on the intellectual vitality of departments and programs. The presence of well-populated and thriving graduate programs is also an important factor in the recruitment of the best applicants for faculty positions at the University. USU graduate programs already serve these multiple needs.

- *VIII, Graduate Education in the Biomedical Sciences and Public Health*, Subcommittee Report, Middle States Association of Colleges and Schools (MSA) Self-Study, submitted to the Evaluation Team representing the Middle States Commission on Higher Education prior to the site visit on March 30 - April 2, 2003.

USU SOM Graduate Education Program Alumni Provide Essential Support to the Military Health System. The early founders of USU understood, that in order to gain and sustain accreditation, Graduate Education Programs had to be structured within the School of Medicine (SOM). The USU SOM admitted its first graduate students in 1977; ***since its establishment, through April of 2004***, a total of 798 advanced degrees have been granted by the University: 242 Doctors of Philosophy; 15 Doctors of Public Health; 76 Masters of Science; 430 Masters of Public Health (***more than 90 percent of the graduates of the MPH Program return to their individual Services and continue to hold public health positions throughout DoD***); 5 Masters of Science in Public Health; 26 Masters of Tropical Medicine and Hygiene; and, 4 Masters of Military Medical History. Of the 166 graduate education students enrolled during 2003, 115 were Ph.D. or DrPH students, and 51 were Master Degree candidates. Graduate Education Programs in the basic medical sciences benefit the USU and the Military Medical System by providing training opportunities for qualified active duty personnel of the Uniformed Services who receive authorization to participate in the USU graduate training programs under the sponsorship of their parent Services (***as reported in the 2003 USU Cost Avoidance Fact Sheet, 41 uniformed officers received advanced degrees during the May 2003 graduation ceremonies***). It is particularly gratifying for the USU faculty to note that a sizeable number of USU Graduate Program alumni hold career level appointments in DoD research, clinical, and educational agencies. Furthermore, a sizeable group of other graduates occupy responsible positions in other Federal government agencies concerned with the general maintenance of the Nation's health. (*See Goal 4 of this Section and Section IV for further information on the ALUMNI of the USU SOM Graduate Education Programs*.)

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GOAL 3: RESEARCH: To be a leader in basic, clinical, and health services research to improve health care, to protect, sustain and enhance the fighting force and secure public health.

OBJECTIVE* - *USU will emphasize research and development relevant to military, Federal, and homeland security needs.

Essential Science Indicators, an ISI evaluation tool, ranks the top journals and nations, and the top 1 percent of scientists, institutions and companies by field of research. To be even listed in any one category, an institution has to be in the top 1 percent by number of citations in the period covered by Essential Science Indicators (ESI). For the period covering the last ten years, USU ranked in the top 1 percent in seven fields: Clinical Medicine; Immunology; Biology & Biochemistry; Microbiology; Neuroscience & Behavior; Psychiatry/Psychology; and, General Social Sciences. This ranking is based on the number of citations received by papers published by USU Faculty in the period.

- **Ms. Ursula Scott, Assistant Vice President, USU Learning Resource Center,** *Essential Science Indicators and USU*, USU Communications Network, February 17, 2004.

USU Research Proves Relevant to the Military Health System. Examples of scientific accomplishments, during 2003, include the following selected examples. ***USU is part of a Middle Atlantic Region University Consortium that was recently selected by Health and Human Services (HHS) as one of eight Regional Centers of Excellence (RCE) for Biodefense and Emerging Infectious Diseases***, with **Alison D. O'Brien, Ph.D., Professor and Chair, USU SOM Department of Microbiology and Immunology,** serving as one of five members on the Middle Atlantic RCE Executive Committee.

A USU research project was recognized by Science as one of the top ten scientific breakthroughs of 2002. Two researchers from the USU SOM Department of Anatomy, Physiology and Genetics (APG), continued their nationally recognized work in which a new photosensory system in the mammalian eye has been identified that is responsible for resetting the internal 24-hour (circadian) clock. In collaboration with colleagues from the Scripps Research Institute, the Genomics Institute of the Novartis Research Foundation, and Washington University, ***this research is leading to an understanding of how to prevent the effects of jet lag, which degrade the performance of deployed service members***; in an age when the men and women of our Armed Forces are immediately deployed into theaters of operation many time zones away, developing such strategies could prove critical to optimized performance and medical readiness.

USU researchers are targeting malaria at home and abroad. Researchers from the USU SOM Department of Preventive Medicine and Biometrics are helping nations to predict high-risk locations for malaria occurrence through satellite imaging and the use of geographic information system (GIS) technology. ***This technology is used to predict malaria mosquito population levels and disease***

transmission risks within precise areas and time frames. Once a functional GIS is developed for a whole country, it can be used in other public health programs such as immunization and dengue control; this USU area of research continued to garner national press coverage, during 2003.

Two USU Department Chairs have had their NIH grants renewed for 22 and 21 Consecutive Years. **Brian M. Cox, Ph.D., Professor and Chair, USU SOM Department of Pharmacology,** and **Alison D. O'Brien, Professor and Chair, USU SOM Department of Microbiology and Immunology,** had their NIH grants renewed for 22 and 21 consecutive years; their studies are focused on ***the mechanisms of morphine tolerance and dependency*** (*Doctor Cox*) and the development of novel plant-based edible vaccines for the prevention of colonization in livestock and ***the protection of humans against infection and disease associated with Shiga toxin-producing E. coli*** (*Doctor O'Brien*). (*See RESEARCH ADMINISTRATION from Section I and SELECTED PROFILES OF USU SOM FACULTY and RESEARCH CENTERS AND PROGRAMS in Section II of the Journal for further information on SOM Research*.)

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<u>OBJECTIVE</u> - USU will emphasize research objectives established by Service and Joint Service medical requirement documents.

<u>The Armed Forces Radiobiology Research Institute (AFRRI) Research Programs Are Globally Recognized</u>. Recent requests for presentations, briefings, collaborative agreements, provision of AFRRI-developed software applications, or on-going membership, include the following selected examples: the *NATO Human Factors and Medicine Panel Symposium*; the *International Atomic Energy Agency Working Group*; the *NATO Research Task Group 006 for Radiation Injury and Medical Countermeasures*; the *International Standards Organization*; the *National Institute of Allergy and Infectious Diseases*; the *National Council on Radiation Protection and Measurements*; the *Department of Homeland Security*; the *2003 National Disaster Medical System Conference*; the *International Congress of Radiation Research*; the *2003 Sixth Annual Force Health Protection Conference*; and, the *World Space Congress*.

Six Defense Technology Objectives (DTOs) guide the thrust of AFRRI's research. *A DTO is a specifically recognized high priority element of technology advancement*. The product of a DTO is expected not only to enhance military operational capability, but also to address other important issues such as affordability and dual-use application, both of which receive special emphasis in the Defense Science and Technology Strategy. Each of AFRRI's six DTOs supports the Quadrennial Defense Review Transformation Operational Goal to Project and Sustain United States Forces. In direct response to its assigned DTOs, AFRRI has achieved the following selected examples: 1) AFRRI investigators have demonstrated significant radioprotective qualities of a non-androgenic steroid, ***5-androstenedial (5-AED)***. The drug has no measurable toxicity at the doses being used to achieve protection; *5-AED* is on track for the submission of a possible investigational new drug application to the Food and Drug Administration (FDA) by the end of 2004; 2) the AFRRI Biological Dosimetry Team has developed the ***Premature Chromosome Condensation (PCC) Assay***, which could eventually allow the use of radiation dose assessment and diagnostic techniques to aid triage and medical management decisions during field

operations; and, 3) AFRRI's ***Rapid Field-Based Depleted Uranium Detection Assay*** has been patented and is expected to transition within the next two to three years. (*See Section VII of the Journal for further information on research at AFRRI*.)

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***OBJECTIVE* - Develop institutional research for self study/enhancement.**

USU Center for Health Disparities Research and Education. During 2003, the USU SOM Departments of Family Medicine and Medical and Clinical Psychology were awarded a $7 million grant from the National Institutes of Health (NIH) National Center on Minority Health and Health Disparities, to sponsor the USU Center for Health Disparities Research and Education, referred to as *Project EXPORT*. ***The Center will sponsor the development of workshops and other educational forums that focus on disseminating critical knowledge about health disparities and teaching practical skills in order to maximize culturally proficient healthcare service delivery***. **Evelyn L. Lewis, M.D., USU SOM Department of Family Medicine,** is the Principal Investigator on the NIH grant; and, **Richard Tanenbaum, Ph.D., USU SOM Department of Medical and Clinical Psychology,** serves as the Co-Principal Investigator and Project Director. **David S. Krantz, Ph.D., Professor and Chair, USU SOM Department of Medical and Clinical Psychology,** is the Center Director. (*See CURRICULUM RENEWAL and RESEARCH PROGRAMS AND CENTERS in Section II of the Journal for further information on Project EXPORT*.)

The USU Center for Medical Genomics and Proteomics Is One of Ten Academic Organizations Funded by NIH. **Harvey B. Pollard, M.D., Ph.D., Professor and Chair, USU SOM Department of Anatomy, Physiology and Genetics,** is the principal investigator for an NIH-sponsored study on the proteomics of cystic fibrosis; one of ten academic organizations in the Nation to win substantial support ($12.7 million over seven years) from the NIH, the award will support the USU Center for Medical Genomics and Proteomics. ***The Center's state-of-the-art research equipment is being made available to benefit researchers across the University***. (*See SELECTED PROFILES OF USU SOM FACULTY in Section II of the Journal for further information*.)

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GOAL 4: LEADERSHIP: To develop and provide uniformed and Federal leaders for national health care service focused on mission readiness and homeland security.

OBJECTIVE - Ensure that faculty and alumni achieve positions of leadership in the Department of Defense and the Federal government.

USU School of Medicine Alumni Provide Continuity and Leadership for the MHS.

USUHS graduates are exceeding the original expectations of Congress when the University was established, thus ensuring physician continuity and leadership for the Military Health System... The USUHS-unique training centered in preventive medicine and combat-related health care is essential to providing superior force health protection and improving the quality of life for our service members, retirees, and families.

- **Vice Admiral Michael L. Cowan, Surgeon General of the Navy,** Testimony before the Senate Appropriations Committee, Subcommittee on Defense Health, April 30, 2003.

The SOM graduating Class of 2003 was the twenty-fourth class to receive Medical Degrees from USU. ***As of April 2004***, of the total 3,421 medical school graduates, 2,735 remain on active duty in the Uniformed Services (Army - 1,056; Navy - 789; Air Force - 796; USPHS - 94); and, ***the 2,641 USU SOM alumni on active duty in the Military Health System represent over 22.2 percent of the total physician force in the DoD - 11,901 physicians***. The average USUS physician graduate is serving approximately 20 years on active duty.

An example of the critical role of USU graduates in providing medical readiness was reported to the Congress in both 2002 and 2003, when the Surgeon General of the Navy testified that the retention of uniformed physicians in certain specialties is essential for medical readiness. Overall, the median length of non-obligated service for USU graduates is three times longer than other accession sources. Significantly, in April of 2003, CNA released *Phase II: The Impact of Constraints and Policies on the Optimal-Mix-of-Accession Model* of its major study, Life-Cycle Costs of Selected Uniformed Health Professions. The second of six major findings states: ***policy-makers need to consider the costs and benefits for each accession source. For example, even though USUHS accessions are the most costly*** (*the General Accounting Office has reported that when all Federal costs are included, the cost of a USU SOM graduate is comparable to the cost of an HPSP graduate*), ***their better retention makes USUHS the most cost-effective accession source for filling 0-6 leadership/grade requirements***.

USU graduates have become well respected in their medical specialties and provide continuity and leadership for the MHS, serving in areas of military medicine ranging from special operations and hospitals, to the White House, and the newly established Department of Homeland Security, to

deployments in Afghanistan and Iraq, and to assignments aboard ships at sea or with the Blue Angels. Currently, **Brigadier General Charles Fox, MC, USA, USU SOM Class of 1981,** is serving as the Commanding General at the Brooke Army Medical Center and Great Plains Regional Medical Command at Fort Sam Houston, Texas. **Brigadier General Bill Germann, USAF, MC, USU SOM Class of 1982,** was selected, during 2003, to command the 89th Medical Group, Malcolm Grow USAF Medical Center, at Andrews Air Force Base, Maryland; and, **Brigadier General (select) Thomas Travis, USAF, MC, USU SOM Class of 1986,** is currently serving as the Commander of the 311th Human Systems Wing, Brooks City-Base (formerly Brooks Air Force Base), Texas. ***Examples of promotions to 0-6 during 2003 include the following*: Army -** 33 percent of the medical corps officers selected for promotion to Colonel were USU SOM graduates; **Navy -** There were 256 physicians considered for promotion to 0-6, in or above zone; overall, 72 physicians were selected for promotion. Of the 35 USU alumni considered for promotion, 12 were selected, resulting in a 34.3 percent selection rate (as compared to the 27.1 percent selection rate for the non-USU physicians being considered); **Air Force -** 37 physicians were selected for promotion to 0-6; USU SOM alumni represented 32.4 percent of those selected for promotion. (*See Section II, SOM ALUMNI, for further examples of SOM Alumni accomplishments, which are individually provided for each Graduating Class*.)

USU Graduate School of Nursing Alumni Provide Leadership for the MHS.

For military health care providers, *the fight* is different. They must be prepared to care for the sick, save lives, and beat the odds in severe environments. Many people think those odds are diminished severely after an injury on the battlefield. But, with the right preparation in operational readiness, nurses and physicians can make the difference.

- Nursing Spectrum, *Caring for Those in Harm's Way*, Volume 13, No. 6DC, March 24, 2003, page 8.

Numerous USU GSN Alumni Were Providing Leadership for the MHS during 2003; Selected Examples Are Provided.

Captain Geoffrey Kuzmich, CRNA, USAF, NC, GSN Class of 2001, Nurse Anesthesia, was deployed for six months to Yemen, Djibouti, and Qatar in support of Operation Iraqi Freedom. Captain Kuzmich successfully performed many anesthetics, including cases on critically wounded pediatric casualties under austere conditions. ***He has been selected as the Director, Anesthesia Services, for the Air Force Center for Sustainment of Trauma and Readiness Skills (C-STARS)*** at the University of Maryland R. Adams Crowley Shock Trauma Center in Baltimore, Maryland. Selected for his superb teaching skills and trauma anesthesia experience, Captain Kuzmich will replace **Captain John Killpack, CRNA, USAF, NC, GSN Class of 1999; *Captain Killpack was the founding Anesthesia Services Director at C-STARS***.

Major David Stamps, CRNA, USAF, NC, GSN Class of 1997, Nurse Anesthesia, was ***recognized for his expertise in casualty anesthesia care through his appointment on the faculty of the Expeditionary Medical Support (EMEDS) Course, USAF School of Aerospace Medicine, Brooks City-Base, Texas***. The EMEDS Course is the state-of-the-art Air Force Casualty Care Course that is attended by all deployed Air Force Medical Service personnel. **Major Jack M. Davis, AN, USA, GSN Class of 1999, Family Nurse Practitioner,** is currently ***serving as the Brigade Surgeon for the 17th Field Artillery Brigade in Balad, Iraq***; he has been deployed since April 3, 2003. (*See Section III, GSN ALUMNI, for further examples of Alumni achievements, which are individually provided for each Graduating Class*.)

USU SOM Graduate Education Program Alumni Provide Leadership for the MHS.

The military unique curricula and programs of the Uniformed Services University, successfully grounded in a multi-Service environment, draw upon lessons learned during past and present-day combat and casualty care to produce career-oriented physicians, advanced practice nurses and scientists with military unique expertise.

- **Vice Admiral Michael L. Cowan, Surgeon General of the Navy,** Testimony before the Senate Appropriations Committee, Subcommittee on Defense Health, April 30, 2003.

The Following Are Selected Examples of the Achievements of the USU Graduate Education Program Alumni.

Class of 1988. **Colonel Robert Gum, USA, USU Graduate Program Class of 1988,** who received a Master of Public Health Degree from USU, served as the Deputy Command Surgeon for the United States Northern Command at Peterson Air Force Base, Colorado, during 2003. **Kevin Tonat, Dr.Ph., USU Graduate Program Class of 1988,** who received his Master of Public Health Degree from USU, retired from the United States Public Health Service and served as the Executive Science Officer for Cosmos Alliance Management, based in Washington, D.C., during 2003.

Class of 1994**. Commander Margaret A.K. Ryan, MC, USN, MPH, Director, DoD Center for Deployment Health Research, Naval Health Research Center, San Diego, California, USU Graduate Program Class of 1994,** who received a Master of Public Health Degree from USU, heads a team at the Naval Health Research Center that has worked on several initiatives to support, directly or indirectly, those uniformed personnel deployed to Operation Iraqi Freedom. Those initiatives include: equipping Naval Environmental Preventive Medicine Unit 5 and several ships (forward deployed) to better detect and rapidly diagnose pathogens causing respiratory illness in service members; assisting with the development of augmented post-deployment health assessments, as required by the Office of the Assistant Secretary of Defense, Health Affairs; partnering with the Centers for Disease Control

(CDC) to address health concerns related to smallpox and anthrax vaccinations; and, standing ready to expeditiously assess the epidemiology of post-deployment health concerns.

***Class of 1995*.** **CAPT Maura Emerson, MPH, MC, USN, Force Medical Officer, Military Sealift Command, Washington Navy Yard, USU Graduate Program Class of 1995,** who received a Master of Public Health Degree from USU, is responsible for the smallpox and other immunization tracking programs for all of the military and civilian contractors in the Military Sealift Command. CAPT Emerson also received her Medical Degree from USU in 1988. **CAPT H. Jeffrey Yund, USN, USU Graduate Program Class of 1995,** who received a Master of Public Health Degree from USU, is currently the Preventive Medicine Officer at the Headquarters of the Marine Corps, where he serves as the Principal Advisor for Deployment Health Surveillance and the Smallpox and Anthrax Immunization Programs. CAPT Yund recently stepped down as the Chair of the Joint Preventive Medicine Policy Group.

***Classes of 1996 and 1998*.** **Lieutenant Colonel Jeffrey Adamovicz, USAF, Ph.D., USU Graduate Program Class of 1996,** who received a Doctoral Degree in Microbiology from USU, served as the Chief of the Bacteriology Division of the United States Army Medical Research Institute of Infectious Diseases at Fort Detrick, Maryland, during 2003. **Lieutenant Colonel Mark Arness, USAF, USU Graduate Program Class of 1998,** who received a Master of Tropical Medicine & Hygiene Degree from USU, served as an Air Force Preventive Medicine Officer at the Army Medical Surveillance Activity and Defense Medical Surveillance System, during 2003; he was responsible for post-deployment health surveillance and involved in adverse event surveillance following vaccination. **CAPT Ken Schor, USN, USU Graduate Program Class of 1998,** who received a Master of Public Health Degree from USU, served as the Preventive Medicine Officer at the Bureau of Medicine and Surgery (BUMED), during 2003; he also served as the Principal Advisor to the Surgeon General for Deployment Health Surveillance and the Smallpox and Anthrax Immunization Programs.

***Classes of 1999 and 2000*.** **CAPT Ed Kilbane, USN, USU Graduate Program Class of 1999,** who received a Master of Public Health Degree from USU, served as a team leader of a forward deployed Naval Environmental Preventive Medicine Unit (NEPMU-7) in a classified operational location, during 2003. **Lieutenant Commander Tanis Batsel, USN, USU Graduate Program Class of 2000,** who received a Master of Public Health Degree from USU, was assigned as the Chief of the Preventive Medicine Branch for the United States Northern Command and the North American Aerospace Defense Command (NORAD) at the Peterson Air Force Base, in Colorado.

***Classes of 2001 and 2002*.** **Major Philip L. Gould, MPH, DTMH, USAF, MC, Preventive Medicine Consultant, Deployment Health Surveillance/Suicide Surveillance, Epidemiology Services Branch, Air Force Institute for Environmental Safety and Occupational Health Risk Assessment, Brooks City-Base, Texas, USU Graduate Program Class of 2001,** who received a Master of Public Health Degree from USU, was assigned with deployment surveillance for all of the Central

Command (CENTCOM) and assisting command units at the Air Force Institute for Environmental Safety and Occupational Health Risk Assessment (AFIERA), during 2003. Personnel at AFIERA are at the forefront of surveillance for deployed troops, with responsibilities to provide routine briefs and reports for: the Secretary of Defense; the Assistant Secretary of Defense, Health Affairs; and, the Joint Chiefs of Staff. **Commander Byron Connor, USN, USU Graduate Program Class of 2002,** who received a Master of Public Health Degree from USU, was a member of the forward deployed Naval Environmental Preventive Medicine Unit (NEPMU-2) in a classified operational location, during 2003. (*See Section IV, ALUMNI, for further information on the graduates of the USU SOM Graduate Education Programs*.)

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OBJECTIVE* - *Ensure that faculty and alumni achieve positions of leadership in professional and scientific organizations.

USU Faculty Are Recognized for Leadership and Expertise.

The University's academic programs are consistent with its mission. In particular, the Team notes: the professionalism of the programs, the objectives to develop the student's intellectual and leadership skills, which are prerequisites for strong foundations in medicine, nursing, the biomedical sciences and public health services, and the credentials of the faculty... The faculty demonstrates a strong sense of commitment to the institution, its students and mission. The faculty is uncommonly sensitive to strengths and needs of their students and the students expressed their recognition of this and reciprocal feelings to team members. Faculty is provided several avenues, through the use of an academic pathway system, to establish scholarship and is provided guidance and flexibility so that they can advance in academic rank regardless of eligibility for tenure. The use of this system is regarded as an exemplar to other medical schools.

- **Evaluation Team of the Middle States Commission on Higher Education,** Report to the Faculty, Administration, Trustees, Students of the Uniformed Services University of the Health Sciences, April 2, 2003, pages 4, 7, and 8.

USU's Public Health Program, with its emphasis on community health, ranks sixth in the Nation according to U.S. News & World Report's *2004 Rankings of America's Best Graduate Schools*... "USU's program ranked just below Tufts University, the Medical College of Wisconsin, Northwestern University, Oregon State University and the University of Rochester on the list of the top ten community health master or doctorate programs."

- USU Medicine, *U.S. News & World Report Ranks USU Graduate Programs in Top Six*, Fall 2003, page 5.

As of November 2003, there were 331 full time faculty members at USU (207 civilians; 124 uniformed officers) with 4,031 off-campus faculty (1,167 civilians; 2,864 uniformed officers). USU faculty members are regularly selected to serve on various study sections for the National Institutes of Health and for other research-granting agencies. Many faculty members, due to their national/ international reputations are:

***Selected to Serve on Editorial Boards*.** **Colonel Andrew J. Satin, USAF, MC, Professor and Chair, USU SOM Department of Obstetrics and Gynecology,** is a member of the Editorial Board of Obstetrics and Gynecology, the premier journal of his specialty; and, **Robert E. Goldstein, M.D., Professor and Chair, USU SOM Department of Medicine,** serves on the Editorial Boards of the American Journal of Cardiology and the Journal of the American College of Cardiology;

Recognized as Senior Officers and Recipients of Distinguished Awards in a Wide Variety of Professional Organizations. The Chairman of the USU SOM Department of Obstetrics and Gynecology also serves as an Examiner for the American Board of Obstetrics and Gynecology; and, the USU SOM Chairman of the USU SOM Department of Medicine received a *Lifetime Distinction Award* from the American College of Physicians; in addition, the Chairman of the USU SOM Department of Medicine was elevated to Mastership by the American College of Physicians;

***Designated to Serve as Consultants or Advisors to the White House, the Office of the Secretary of Defense, and International Schools of Medicine*.** During 2003, **James G. Smirniotopoulos, M.D., Professor and Chair, USU SOM Department of Radiology and Radiological Sciences,** was appointed to serve as the Defense Department's Health Affairs Representative to the newly formed National Advisory Council for Biomedical Imaging and Bioengineering. The Council advises Health and Human Services, the National Institutes of Health, and the National Institute of Biomedical Imaging and Bioengineering on matters relating to the conduct and support of research, training, health information dissemination, and other programs that address biomedical imaging, biomedical engineering, and associated technologies and modalities with biomedical applications;

***Routinely Selected to Serve on University, Military, and Federal and Professional Organization Committees in a Variety of Leadership and Service Capacities*.** During 2003, **Emmanuel G. Cassimatis, M.D., Professor, USU SOM Department of Psychiatry, and USU SOM Associate Dean for Clinical Affairs,** was re-elected to the American Medical Association Council on Medical Education; he continues to serve on the Board of Managers of the Association of Military Surgeons of the United States; and,

Have Achieved National and International Recognition in the Military- Unique Practice of Health Care*.** During 2002 through 2003, **Robert J. Ursano, M.D., Professor and Chair, USU SOM Department of Psychiatry, and Director, USU Center for the Study of Traumatic Stress,** served as a member of the Secretary of Defense's 12-member Task Force, *RED NUFF*; he also served as a member of a distinguished Institute of Medicine Committee and ***was instrumental in developing and

advancing a national strategy that integrates mental health into a public health paradigm for terrorism management and response.

(*Sections II, III, IV, V, and VII of the Journal include specific recognition of faculty in the SOM, GSN, Graduate Education, Graduate Medical Education, and AFRRI; Appendix C provides selected examples of individual faculty and group achievements.*)

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GOAL 5: STEWARDSHIP: We will protect and enhance the human and physical resources of the University, optimize productivity, promote a sense of family and community, while emphasizing flexibility in response to changing world conditions.

OBJECTIVE* - *USU will recruit, reward, and retain outstanding and diverse students, faculty, and staff.

Construction Design, Addition of Additional Space, and Renovation Projects During 2003 Help to Retain and Recruit Students, Faculty, and Staff.

Construction of a New Building on the USU Campus. The University was first able to participate in the Military Construction (MILCON) Program in 1999; since that time, the USU President and the Vice President for Administration and Management (VAM) have led extensive coordinating efforts to increase available classroom and administrative space at USU through the construction of a new building. Significantly, on September 25, 2001, USU was informed by the Bureau of Navy Medicine and Surgery (BUMED) that its construction project (***Building E - USU Academic Program Center***) had been placed as a funded project in the Medical MILCON for Fiscal Year 2006. On January 7, 2003, the TRICARE Management Activity (TMA) authorized the design of the USU Academic Program Center at a cost of $9.6 million and approved the project as an accelerated Program for Design (*the overall project calls for 56,020 gross square feet, to include underground parking; the Program for Design distributes 41,055 gross square feet*).

Navy Base Reallocation of Space to USU Results in Renovation Projects during 2003. Since 1998, the University has coordinated with the National Naval Medical Center (NNMC) for the *reallocation of Buildings 28, 53, 59, 79, and 139 to USU for a total of 48,140 square feet of laboratory and administrative space*. On-going renovation took place, during 2003.

Laboratory Renovations throughout Buildings A, B, C, and D. Laboratory space throughout Buildings A, B, C, and D has been renovated from 1993 through 2003, totalling 35,457 square feet (40.7 percent of the 86,926 square feet of laboratory space on the USU campus). During 2003, $1,120,926 was funded for laboratory renovations by the USU Facilities Division through collaborative efforts by the VAM; the USU Facilities Division; the Dean, SOM; the USU Vice Presidents for Research and Resource Management; and, the Navy Public Works Center (PWC).

Strategic Planning for Facilities Maintenance. Eight years ago, USU coordinated with PWC to develop a five-year facilities maintenance plan for the USU complex; that plan has now evolved into the current *Project Listing Process*. As all documentation has already been completed with PWC, the Project Listing Process enables USU to utilize year-end funding. Projects totalling $11,943,378 were

obligated by the end of 2003. As a result, the USU campus is well maintained and reflects excellent stewardship on the part of the USU leadership.

(*See STEWARDSHIP at the end of this Section of the Journal for detailed information on the construction of Building E, the Navy allocation of Space to USU, renovation of laboratory space, and facilities maintenance*.)

Approval of USU Faculty Salary Schedules Is Essential for the Retention and Recruitment of Qualified Faculty. The Principal Deputy Assistant Secretary of Defense (Force Management Policy) approved salary schedules for the USU AD employees during July of 2003. Significant to these efforts is the acquired ability for USU senior management to pay up to Executive Level I for any position that has been designated as essential and where the University must pay higher than the salary schedules to recruit and retain exceptional faculty and staff; the salary schedules were updated during January of 2004 to reflect the current Executive Level I pay level. These on-going efforts are essential in order to attract and retain mission-essential faculty and staff at the University, which, in turn, enhances USU's ability to attract quality students.

USU Efforts for Human Capital Development.

Development Activities. During 2003, **Cindy C. Wilson, Ph.D., Professor, USU SOM Department of Family Medicine,** coordinated on behalf of her department with the SOM Offices of Faculty Affairs and Medical Education to sponsor numerous courses and seminars, which strongly supported faculty development at USU. During 2003, 232 USU faculty members earned over 359 hours of continuing education. The USU Mentor Program and the USU Toastmasters International Club received support and guidance, throughout 2003. In addition numerous training opportunities were provided to the USU civilian workforce: 140 training vouchers and 60 on-line subscriptions for computer-related training for the Microsoft Office Suite; and, 634 employees were trained on-site, to include 150 attendees at the Ethics Training Classes. (*See ORGANIZATIONAL CULTURE, Personal Development and Retention, which follows in this Section of the Journal for further information*.)

Cultural Diversity, Orientation, and Recognition Activities, Strengthened by the Timely Sharing of Information. During 2003, the USU Equal Employment Opportunity (EEO) Special Emphasis Program offered six major events to reinforce both the understanding of, and the appreciation for, the cultural diversity that exists throughout USU. The events were attended by over 1,250 members of the USU community. Since October of 2000, USU has provided formal sessions of the USU Orientation Program to 413 new, civilian and uniformed members of the USU community; 157 employees attended three sessions held during 2003. During 2003, the USU President personally presented service awards to designated employees at their work sites; the Office of Military Personnel approved, processed and presented 92 awards for the USU military personnel. In addition, the 2002 Edition of the USU Journal, the *USU Cost Avoidance Fact Sheet*, the *USU Briefing Paper* summarizing the current USU Journal,

and on-going issues of USU Medicine have communicated the personal and group accomplishments and efforts of the USU community via hard copies, web sites, and CD-ROMs. (*See ORGANIZATIONAL CULTURE, Communicating Equal Opportunity Principles and Appreciation of Diversity, in this Section of the Journal for further information*.)

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***OBJECTIVE* - USU will work to ensure that all USU initiatives and activities are characterized by the principles of ethics and accountability.**

Cost-Avoidance Generated for the Department of Defense and the USU Ethics Program Ensure Accountability and Ethical Standards for USU.

USU 2003 Fact Sheet on Cost Avoidance. A four-page USU Fact Sheet on Cost Avoidance has been documented and produced since 1997. The Fact Sheet reflects an in-depth coordination effort led by the Vice President for Administration and Management with the School of Medicine (SOM) Clinical Departments, the USU Office of Continuing Education for Health Professionals (CHE), the USU Military Training Network (MTN), the SOM Office of Graduate Education, and the Graduate School of Nursing (GSN). Documentation was finalized, during May of 2003, to include four USU programs (***Clinical and Consultative Services - $12,190,375*** *data is now available to show that the average number of hours of patient care and consultation provided each year is over 140,000 hours; 154 USU faculty members provided 147,607 hours during 2003;* ***CHE - $2,653,448****;* ***MTN - $13,007,208****; and,* ***Graduate Education - $1,430,000***), which validated that **$29.3 million of cost-avoidance** was generated by USU for the Department of Defense, during 2003. This self-reporting survey has become increasingly important in USU's on-going effort to document its significant products and services. (*This subject is discussed in more detail under OPTIMIZATION, which follows in this section of the USU Journal*.)

Office of Government Ethics Review Finds USU Ethics Program Provides Quality Advice and Counseling Services. The Office of Government Ethics conducts periodic program reviews to evaluate agency ethics programs throughout the Executive Branch of the Federal Government. These reviews are conducted to ensure compliance with *Standards of Ethical Conduct for Employees of the Executive Branch*. The USU Ethics Program was reviewed in the Fall of 2002 and a report was issued on December 10, 2002. The report highlighted that the University... ***continues to operate a strong and meaningful ethics program*** and provides... ***high quality advice and counseling services***. The report concluded... ***we are pleased to report that the University's Ethics Program continues to comply with applicable ethics laws and regulations***. There were no recommendations for improvement of the USU Ethics Program. On December 13, 2002, the Office of Government Ethics issued an electronic newsletter, which read in part... ***the University, Congressionally established to train men and women for careers as medical officers in the military services and Public Health Service, faces unique ethics challenges, which it successfully addresses***. The USU Ethics Program continued its activities and support functions, throughout 2003.

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RELEVANCE - MISSION ACCOMPLISHMENT

USU Graduates Provide Continuity and Leadership and Ensure Medical Readiness.

The School of Medicine. ***Continuity and leadership ensure both readiness and the preservation of lessons learned during combat and casualty care***; these were significant factors that motivated the Congress of the United States and the Executive Office of the President to recommend and approve the establishment of USU and the Health Professions Scholarship Program (HPSP) as complementary sources of accession for uniformed physicians. In 1972, Public Law 92-426, *the Uniformed Services Health Professions Revitalization Act*, established the HPSP to be a flexible source for the quantity of physicians required by the Armed Forces; and, ***USU was established to provide a cadre of military medical officers who would serve a career as active duty physicians and effectively ensure continuity and leadership for the MHS.***

Continuity.

As the Executive Agent of the Uniformed Services University of the Health Sciences (USUHS), I would like to comment on the extraordinary achievements of the University... USUHS graduates with retention rates averaging twenty years of active duty service, now represent over 22 percent of the total physician officers on active duty in the Armed Forces. And, as provided to the Congress during 2002, the median length of non-obligated service for physician specialists in the Military Health System, not including USUHS graduates, is 2.9 years; however, the median length of non-obligated service for USUHS graduates is 9 years. USUHS graduates are exceeding the original expectations of Congress when the University was established, thus ensuring physician continuity and leadership for the Military Health System.

- **Vice Admiral Michael L. Cowan, Surgeon General of the Navy,** Testimony before the Senate Appropriations Committee, Subcommittee on Defense Health, April 30, 2003.

With the graduation of the 24th School of Medicine (SOM) Class in May of 2003, 3,421 uniformed officers had been granted Medical Degrees. ***As of April 2004, the 2,641 USU physicians on active duty in the Armed Forces represented 22.2 percent (one out of every five) of the 11,901 physicians on active duty in the Army*** (*Total Army Physicians* - 4,218; *USU Physicians* - 1,056)***, Navy*** (*Total Navy Physicians* - 3,983; *USU Physicians* - 789)***, and Air Force*** (*Total Air Force Physicians* - 3,700; *USU Physicians* - 796); the congressional founders had hoped for a representation of ten percent. (In addition, there are 94 USU SOM alumni on active duty in the United States Public Health Service; therefore, as of April 2004, a total of 2,735 USU SOM graduates remained on active duty.)

Leadership. The overall retention for USU graduates from the Class of 1980 through April of 2004 (24 SOM classes) is 80 percent; the Congress had originally envisioned retention rates close to 70 percent. In accordance with this extraordinary retention, recent reviews have documented that one, out of every two SOM alumni who has completed his/her residency training, is in a significant operational or leadership position in the MHS.

Two In-Depth Studies Reflect that USU SOM Graduates Are the Most Cost-Effective Accession Source for Filling Senior Positions in the MHS and USU SOM Alumni Are Well Prepared for, and Succeed in, Operational and Leadership Positions. During 2003, the Center for Navy Analysis (CNA), conducted an in-depth study entitled, *Life-Cycle Costs of Selected Uniformed Health Professions*, part of which included the development of a Cost Model Methodology. In Phase II of the study, CNA used the cost and historical retention patterns from Phase I, in addition to current constraints and business practices. CNA, in its summary report of Phase II, page one, stated that ***USU is the most cost-effective accession source for filling 0-6 grade physician requirements***. This directly validates the September 1995 GAO Report, *Military Physicians - DoD's Medical School and Scholarship Program*, page 43, which states that ***43 out of 44 commanders of major military medical units perceived that physicians from the University have a greater overall understanding of the military, greater commitment to the military, better preparation for operational assignments, and better preparation for leadership roles***. Without a doubt, the continuity and leadership provided by the USU SOM alumni ensure medical readiness and the preservation of lessons learned for the MHS.

Medical Readiness.

I want to extend my congratulations to you, the leadership and the faculty at the Uniformed Services University for your exemplary performance in receiving a ten-year accreditation with commendation from the Middle States Commission on Higher Education. This is a notable achievement, and it reflects a successful, long-term commitment to the highest levels of professional medical education for this Nation's Military Health System. The quality of your graduates continues to serve as a testament to the quality of the teaching that was endorsed by the Middle States Commission. You and your staff continue to make significant contributions to our Nation's military readiness and our national medical preparedness.

- **The Honorable William Winkenwerder, Jr., M.D., Assistant Secretary of Defense, Health Affairs,** Letter to the USU President, July 22, 2003.

USU is the Nation's only University dedicated to ensure medical readiness for the MHS. In the December issues of both 1998 and 2001, the Association of American Medical Colleges (AAMC) Reporter recognized USU as the ***one place where the physicians of tomorrow do get thorough preparation to deal with the medical aspects of chemical and biological terrorism. USU students learn how nuclear, biological, and chemical agents act on the human body and what to do in the event of***

a suspected exposure - from detection to decontamination and medical countermeasures. The MHS must provide quality health care during humanitarian, civic assistance, or operational contingencies. This critical medical response requires that physicians in the MHS be provided a solid background in tropical medicine and hygiene, parasitology, and the use of epidemiologic methods and preventive medicine. USU students are provided with approximately 130 hours of study in these areas, compared to about 13 hours found in the typical civilian medical school curriculum. In addition, the multi-Service environment of USU facilitates the students' understanding of the cultures and vocabularies of the United States Army, Navy, Air Force, and Public Health Service, which ensures two of the essential components of readiness: *flexibility and continuity during joint service operational contingencies*. And, the USU SOM has implemented innovative efforts to meet the evolving requirements of medical readiness: the newly established National Capital Area Medical Simulation Center and the USU Patient Simulation Laboratory; the SOM Department of Biomedical Informatics; and, the recently established interdisciplinary graduate program, Emerging Infectious Diseases (*see Section II for a detailed description of these SOM programs*). As mentioned above, in December of 2001, following the terrorist attacks of September 11th, the AAMC Reporter featured USU and reconfirmed the findings reported in its earlier article: ***Large-scale terrorist attacks and biological intimidation campaigns on American soil have sent shockwaves of change rippling through every layer of society. Each unexpected new challenge requires an adjustment in preconceptions and contains a practical lesson for the future. But at USUHS, it is learning as usual. Students have been explicitly trained to provide a medical response to terrorism scenarios like the ones that are playing out in the United States and abroad today.***

The Graduate School of Nursing.

As Army Nurse Corps officers in the USU Master Degree Family Nurse Practitioner Program, our education further prepares us to live out our motto - Ready, Caring, Proud.

Operation Bushmaster provided a scenario portraying a hostile environment. The week-long exercise (conducted in San Antonio, Texas) **allowed for Advanced Practice Nursing and School of Medicine students to work together in a field environment under simulated battlefield conditions. We students found ourselves triaging and aggressively maintaining patient care as second nature. Biological and chemical agents played a much bigger part in our scenarios than we had experienced in previous training. The threat of these weapons was ever-present in our training scenarios as well. With the assistance of battlefield telemedicine and satellite communication with stateside facilities, such as the Walter Reed Army Medical Center in Washington, D.C., we were able to describe afflictions and send photos of patients for consultation, diagnosis, and treatment.**

- Nursing Spectrum, *Caring for Those in Harm's Way*, Volume 13, No. 6DC, March 24, 2003, pages 8-9.

In 1993, Congress directed the initiation of a demonstration program for the preparation of family nurse practitioners to meet the needs of the Uniformed Services. In the short time since its

establishment, the USU Graduate School of Nursing (GSN), with the strong cooperation and support of the Federal Nursing Chiefs, has: 1) recruited a qualified faculty; 2) successfully established curricula for the Family Nurse Practitioner, Nurse Anesthesia, and Perioperative Clinical Nurse Specialist options in its Master of Science in Nursing (MSN) Program; 3) identified accredited clinical practice sites and completed memoranda of understanding (MOUs) for those relationships with 21 military treatment facilities, to include an additional 111 non-DoD, Federal, and civilian clinical sites; 4) developed and implemented an administrative structure that provides for faculty and student participation in the overall governance of the GSN; 5) submitted self-studies and received maximum terms of accreditation for its MSN Degree Program from its three professional accrediting entities; 6) received formal approval from Health Affairs, Office of the Secretary of Defense, as a permanently funded DoD Program on February 26, 1996; 7) initiated, implemented, and continuously reviewed the outcomes evaluation process for its academic program (*on February 26, 2002, credentialing scoring information released by the American Nurse Credentialing Center's Commission on Certification showed that of the 15 GSN Family Nurse Practitioner graduates who took their certification examination, all 15 passed with a mean score of 123.3, the highest ever achieved; and, seven of the ten graduates in Nurse Anesthesia scored a perfect 600 on the Council on Certification of Nurse Anesthetists Certification Examination, during 2003*); 8) initiated curricula and governance reviews; 9) collaborated with the Department of Veterans Affairs and utilized new technology to establish distance learning options (*resulting in the DoD's first virtual graduation at the advanced level and a total of 70 virtual graduates*); 10) established a Doctoral Program in Nursing Sciences with the enrollment of its Charter Class in the Fall of 2003; and, 11) as of April 2004, granted Masters of Science in Nursing Degrees to 207 advanced practice nurses (*including 7 MSNs granted through distance learning*) with over 80 percent of its graduates remaining on active duty. All GSN graduates have passed their certification examinations with greater than a 97 percent pass rate on the first attempt. The GSN has gained recognition as the first advanced practice nursing school in the United States to serve the Uniformed Services with a clear mission of ***Learning to Care for Those in Harm's Way***.

Advanced Degrees Earned Through Distance Learning. The GSN has enjoyed an on-going, successful seven-year collaborative relationship with the Department of Veterans Affairs (VA). The 20-month VA/DoD Distance Learning Program has been recognized as a model for cost-effective collaboration. ***At its inception, it was the first program in the Nation to offer a complete nurse practitioner curriculum via distance education***. The collaborative efforts of the GSN with the VA in the area of distance learning successfully demonstrated a cost-effective form of advanced education where nursing students received advanced training in critically-required specialty areas, while maintaining their current positions at the VA medical centers. Twenty-six students, through a *virtual commencement exercise*, graduated from the VA/DoD Distance Learning Program on May 18, 1999; an additional student completed requirements during August of 1999, bringing the total to 27 graduates from the first class. The virtual graduation was broadcast from USU and linked with eight VA Medical Centers located across the United States. All graduates were eligible to sit for the American Nurses Association Credentialing Examination for Adult Nurse Practitioners. This graduation marked the first virtual advanced-level graduation for either the VA or DoD. Outcome data from present students, alumni, and employers continue to reflect high levels of satisfaction with the distance learning program. A second class, with 33 students located in ten VA Medical Centers, graduated on May 15, 2001. And, a third class of ten students graduated on May 13, 2003. *To date, 70 individuals have successfully graduated from this exceptional distance learning program.* The program was halted following the third graduation because the VA had reached

its target goal for Nurse Practitioners. To ensure that other Federal entities could easily access the lessons learned during this Program, a joint report was issued by the GSN and the VA Nursing Strategic Healthcare Group, in November of 2000. The report, *The VA/DoD Post-Master Adult Nurse Practitioner Distance Learning Program - From Concept to Graduation*, documents, in chronological order, the formulation of the partnership between the DoD and the VA, the conceptual stages and developmental processes, learning strategies, course evolvement, assessment methodologies, clinical experiences, and the transmission effectiveness for the entire program. Future initiatives between the GSN and the VA are being considered with an emphasis on improving nursing practice and health care for veterans, to include the newly established GSN Doctoral Degree Program. (*See Section III for a detailed description of this GSN program*.)

A New Doctoral Degree Program in Nursing and a Clinical Nurse Specialist Option Are Established. To meet the evolving requirement for nursing research relevant to the MHS, the United States Public Health Service (USPHS), and other Federal Health Systems, in March of 2002, with the approval of the Federal Nursing Chiefs, the GSN began the process for the development of a ***Doctoral Program in Nursing***. The new Program will prepare nurses to be uniquely qualified as leaders in research, education, and clinical practice to serve in the MHS, the USPHS, and other Federal Health Systems. Additionally, with the well-recognized national shortage of both staff nurses and nursing faculty, GSN doctoral graduates must be prepared to augment faculty requirements at educational organizations and to serve as researchers for studying health care in the MHS, USPHS, and other Federal Health Systems. *A Doctoral Program that has a focus on the MHS, as well as the USPHS and other Federal Health Systems, is <u>not</u> available at civilian universities; no other institution is better positioned than the USU GSN to provide a Doctoral Program with such a unique focus.* The new program accommodates both full-time and part-time students and will incorporate aspects of both distance and alternative learning. *The GSN welcomed its first doctoral students in the Fall of 2003; three students were admitted into the full-time program and are expected to complete their degree requirements, by 2006. Ten students matriculated into the part-time option; they are expected to complete their degree requirements, by 2008.*

In addition, the Federal Nursing Chiefs identified a need for a *Clinical Nurse Specialist (CNS) option in the GSN MSN Degree Program,* in June of 2001. The new program option was presented to, and favorably received by, the USU Executive Committee, in January of 2002; next, it was presented to the USU BOR and received formal approval, on February 27, 2002. The Perioperative Clinical Nurse Specialty (PCNS) option within the GSN MSN Degree Program began with the Class of 2005, which matriculated eight uniformed officers, in June of 2003; the Class of 2006, which will begin, in June of 2004, is projected to consist of nine students representing the TriServices.

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In Addition to the SOM and GSN Alumni and Achievements, Five Other OSD-Recognized, Significant Areas of Support and Products Are Provided by USU for the MHS.

Clinical Support for the Military Health System. *As reported in the 2003 USU Cost Avoidance Fact Sheet*, during their course of teaching, the USU faculty provided over 147,607 hours of clinical care at the Army, Navy, and Air Force Medical Treatment Facilities (MTFs) in the National Capital Area. Without this significant provision of support during 2003, the MTFs would have had to augment their medical staffs by 147,607 work hours in order to maintain the level of patient care within the direct care system of the MHS.

The USU SOM Graduate Education Programs. *As of April 2004*, the SOM Graduate Degree Programs have conferred a total of 798 advanced degrees: 242 Doctors of Philosophy; 15 Doctors of Public Health; 76 Masters of Science; 430 Masters of Public Health; 5 Masters of Science in Public Health; 26 Masters of Tropical Medicine and Hygiene; and, 4 Masters of Military Medical History. *As reported in the 2003 USU Cost Avoidance Fact Sheet*, 41 uniformed officers received advanced degrees (37 Masters Degrees and 4 Doctoral Degrees). The USU SOM Graduate Education Programs are responsive to the special needs of the Military Health System; a detailed discussion on the superb responsiveness of the USU Graduate Education Programs is provided in Section IV of the Journal.

The USU SOM Office of Graduate Medical Education. The USU Office of Graduate Medical Education (GME) provides essential support for the MHS in that it serves as the Administrative Office and provides oversight for the National Capital Consortium (NCC). The USU SOM Office of GME collects and evaluates data on DoD GME programs to ensure academic and scientific excellence; and, it provides consultation and advice for the Dean of the SOM, the President of USU, and others throughout the MHS on military-unique medical curricula. During 2003, all of the GME programs in the National Capital Area were under the cost-effective sponsorship of the NCC, bringing the current total to 65 programs. The NCC, by supplying leadership and resources, complies with the Accreditation Council for Graduate Medical Education (ACGME) Institutional Requirements and ensures that Consortium-sponsored programs comply with ACGME program requirements (*see Section V of the Journal for further information*).

The USU Office of Continuing Education for Health Professionals and the USU Military Training Network. The USU Office of Continuing Education for Health Professionals (CHE), to include the Military Training Network (MTN), provides significant, cost-effective and relevant support for the MHS by facilitating the continued professional growth of health care professionals, throughout the MHS. In carrying out its principal responsibilities, *as reported in the 2003 USU Cost Avoidance Fact Sheet*, CHE sponsored continuing medical education for 719 activities with an attendance of 5,208 physicians; provided continuing nursing education for 62 activities with an attendance of 1,378 nurses; approved 25 programs of Category II (non-ACHE) continuing education credit for 480 members of the American College of Healthcare Executives; and, provided one continuing education activity for 4 psychologists. The DoD sites affiliated with the USU MTN are approved to conduct self-sustained resuscitative and

trauma medicine training. This continues to prove cost-effective for the MHS because it eliminates the need to pay premium training costs for civilian resuscitative and trauma medicine programs. As reported in the 2003 USU Cost Avoidance Fact Sheet, 223,735 DoD personnel were trained through the USU MTN (*see Section VI of the Journal for further information*).

USU Serves as the Academic Center for 2,864 Active-Duty Faculty in the MHS. USU serves as the Academic Center for academic and research activities for 2,864 active-duty, off-campus USU faculty located throughout the MHS. USU on-site faculty have sponsored, hosted, or participated in the major conferences held by the MHS, during 2003; in addition, military relevant consultation is continuously provided to the MHS and other Federal agencies by the internationally recognized experts within the University's multiple centers, departments, programs, and institutes. As addressed in this Section of the Journal, *the military-relevant research conducted at USU, in collaboration with many hundreds of off-campus USU faculty assigned throughout the MHS, addresses critical issues for the Armed Forces*. The knowledge documented by the on-site and off-site USU faculty, through their collaborative research, is opening new avenues to: enhance the quality of clinical care; and, better control, diagnose, protect, and provide treatment for millions of MHS beneficiaries.

(All of the products and services, described above, are resourced as part of the operating budget of the University and are discussed throughout this report.)

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ACCREDITATION

I want to extend my congratulations to you, the leadership and the faculty at the Uniformed Services University for your exemplary performance in receiving a ten-year accreditation with commendation from the Middle States Commission on Higher Education! This is a notable achievement, and it reflects a successful, long-term commitment to the highest levels of professional medical education for this Nation's Military Health System. The quality of your graduates continues to serve as a testament to the quality of the teaching that was endorsed by the Middle States Commission. You and your staff continue to make significant contributions to our Nation's military readiness and our national medical preparedness.

- **The Honorable William Winkenwerder, Jr., M.D., Assistant Secretary of Defense, Health Affairs,** Letter to the USU President dated July 22, 2003.

The Middle States Association of Colleges and Schools.

Background. The University is accredited by the Middle States Association of Colleges and Schools Commission on Higher Education (MSA/CHE). The MSA/CHE is an institutional accrediting agency recognized by the United States Secretary of Education and the Commission on Recognition of Postsecondary Accreditation. Following its establishment in 1972, USU received *candidate for accreditation status* from the MSA/CHE in 1977, and has retained accreditation since 1984. In order to maintain the accreditation of the educational programs within the School of Medicine and the Graduate School of Nursing, the University must receive accreditation from the MSA/CHE. Accreditation by the MSA/CHE is an expression of confidence in an institution's mission and goals, its performance, and its resources. Based upon the results of an institutional self-study and an evaluation by a team of peers and colleagues assigned by the MSA/CHE, accreditation attests to the judgment of the MSA/CHE that an institution has met the following criteria: it is guided by well-defined and appropriate goals; it has established conditions and procedures under which its goals can be realized; it is accomplishing its goals substantially; and, it meets the standards of the MSA/CHE.

In 1993, the University underwent a successful institutional self-study and a reaccreditation site visit by the MSA/CHE. As requested by the MSA/CHE, a Periodic Report was submitted by USU to the MSA/CHE in June of 1998. In July of 1998, the MSA/CHE reported that the USU Periodic Report was... ***to be applauded for its serious and candid review of the areas of concerns pointed out by the Middle States Evaluation Team in 1993***. The MSA/CHE correspondence further emphasized that... ***it is clear that USUHS is responding to its internal and external environments and preparing aggressively for the future.*** On December 1, 1998, the USU President was notified by the MSA/CHE that the University had been granted accreditation, with no follow-up required. The next evaluation visit by the MSA/CHE was scheduled for the Spring of 2003.

Preparation for an Evaluation Visit. The MSA/CHE does not prescribe a particular institutional planning process. However, it does strongly suggest that planning be conducted within the context of the institution's goals, priorities, resources, and commitments. This means, at a minimum, that the institution has: carried out a thorough examination of its mission; reviewed its internal and external environments to form preliminary estimates of its strengths, weaknesses, opportunities, and threats; developed and implemented a formal system for setting priorities and for developing budgets, strategies, activities, and timetables; and, devised an evaluation procedure for systematically reviewing self-study planning, the self-study process, and self-study findings and recommendations. A steering committee must be established that is responsible for providing leadership to the entire self-study process, to include: determining the key issues for the self-study; preparing the design; developing charges to the subcommittees and coordinating their work on the various issues studied; ensuring that the timetable is implemented as planned; arranging for one or more campus hearings to review drafts of the self-study; and, overseeing the completion of the final self-study report. In accordance with the above, the USU President established a steering committee to draft a self-study design proposal; the design proposal was submitted to the MSA/CHE staff liaison, in April of 2001, for review and approval. The MSA/CHE liaison visited the USU campus on May 18, 2001, and met with members of the USU administration, the Board of Regents, and students and faculty; the outcome of the visit was quite positive, with only one recommendation for USU on the inclusion of information on how outcomes assessment would be integrated into the self-study document. The self-study design was revised to include the MSA/CHE liaison's recommendation and received approval in August of 2001. During September of 2001, the University established fifteen self-study subcommittees. Draft reports were scheduled for submission to the steering committee, beginning in early February of 2002; subcommittee final reports were due to the steering committee in May of 2002. The steering committee reviewed and merged the subcommittee reports into one comprehensive report for the MSA/CHE. A draft of the comprehensive report was circulated to the University for review and comment. Revisions were incorporated, as appropriate, into the draft document by the steering committee prior to the final review by the Office of the USU President; copies were then submitted to the MSA/CHE. The submission of all required documents to the MSA/CHE was completed, during February of 2003.

A Middle States Evaluation Team Visits the University. Following the receipt and review of the USU Self-Study, an Evaluation Team representing the Middle States Commission on Higher Education visited the USU campus on March 30 - April 2, 2003. The Team indicated a positive review of the University upon the conclusion of their visit. ***On July 1, 2003, the University President was notified by the Middle States Commission on Higher Education that USU had received accreditation with commendation with the next self-study to be conducted during 2012-2013***.

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Fourteen Accrediting Entities Ensure that Educational Standards Are Met by the University. In addition to the MSA/CHE accreditation, the following thirteen professional organizations continue to authorize accreditation for the University's schools and programs:

SOM: 1) the Liaison Committee on Medical Education (LCME); 2) the Accreditation Council for Continuing Medical Education (ACCME); 3) the Council on Education for Public Health (CEPH); 4) the American Psychological Association (APA) Committee on Accreditation; 5) the Accreditation Board for Engineering and Technology (ABET);

GSN: 6) the National League for Nursing Accrediting Commission (NLNAC); 7) the Council on Accreditation of Nurse Anesthesia Programs (COA); 8) the American Association of Colleges of Nursing Commission on Collegiate Nursing Education (AACN/CCNE);

University: 9) the Nuclear Regulatory Commission (NRC); 10) the American Association for the Accreditation of Laboratory Animal Care (AAALAC); 11) the American Nurses Credentialing Center's Commission on Accreditation; 12) the American College of Healthcare Executives (ACHE); and, 13) the State of Maryland Department of Health and Mental Hygiene Board of Social Work Examiners.

(*Individual discussions on the accreditation of the School of Medicine, the Graduate School of Nursing, the Graduate Education Programs, the Graduate Medical Education Program, and the Office of Continuing Education for Health Professionals are provided in Sections II, III, IV, V, and VI of this report*.)

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OPTIMIZATION - OSD RECOGNITION OF USU's MULTIPLE PRODUCTS
THE JOINT MERITORIOUS UNIT AWARD
THE GENERATION OF COST-AVOIDANCE
CENTER OF NAVY ANALYSIS REPORTS

Thank you for your letter and the information on the Uniformed Services University of the Health Sciences (USUHS) as well as the 2002 Edition of the USU Journal. It is gratifying to see the University provide continuity and leadership for ensuring medical readiness. Alumni are highly trained and will no doubt continue their tradition of providing first-rate Military Health System support. The Cost Avoidance Fact Sheet is further evidence of your commitment and dedication... Please convey to Admiral Zimble my deep appreciation for the hard work he and the people of USUHS are doing for those of us in uniform.

- **General Richard B. Myers, Chairman of the Joint Chiefs of Staff,** Letter to USU, November 20, 2003.

OSD-Conducted Surveys Recognize USU's Academic Certification and Faculty Credentials. In mid-1997, Management Reform Memorandum 3, Office of the Secretary of Defense (OSD), called for a study of the educational and professional development programs sponsored by OSD. That study and the efforts of the Defense Reform Task Force led to the Defense Reform Initiative's decision to establish an Office of the Chancellor for Education and Professional Development. Throughout 1997 and 1998, the USU Vice President for Administration and Management (VAM) coordinated the University's participation in intensive surveys on streamlining education throughout DoD. The University provided inclusive responses to the Office of the Deputy Assistant Secretary for Civilian Personnel Policy; those responses included all of the services and products resourced by USU as part of its operating cost. ***The OSD-conducted surveys mark the first official OSD recognition of the multiple products of USU in addition to its medical school graduates.*** As a result of those surveys, and based on the average course length of the continuing education efforts of the University, OSD analysts identified approximately 188 student man years, *in addition to*, the 814 (as reported in November of 2003: SOM - 674; GSN - 66; Graduate Education - 74) uniformed students who are traditionally credited, each year, to USU.

During 1998, in response to DoD's Defense Reform Initiative Directive 41, a two-part survey on faculty credentials was conducted by the USU VAM for use in the development of a blueprint for the Office of the Chancellor to be established within OSD. ***The Office of the Deputy Assistant Secretary for Civilian Personnel Policy concluded, as in August of 1997, that USU had the strongest academic certification and faculty credentials among all activities surveyed.***

USU Comprehensive Annual Faculty Listing Report. As part of an on-going process for sharing information with OSD reference the credentials of the USU faculty, the USU Vice President for Administration and Management coordinates and publishes a comprehensive Annual Faculty Listing Report. During November of each year, all full-time faculty members *(331 full-time USU faculty during 2003 - 207 civilians; 124 uniformed officers)* are counted in the totals of the Department where each

holds his or her primary faculty appointment. Although it only captures a point in time, the annual report documents the unique and wide-reaching, collaborative relationships of the University with its off-campus faculty *(4,031 off-campus faculty during 2003 - 1,167 civilians; 2,864 uniformed officers)*. Since the initial report completed in 1998, recommendations from the USU community have been incorporated so that the following information is included within the annual report: 1) totals of full-time faculty (civilian and uniformed faculty members are identified by name); 2) the tabulation of academic titles, in accordance with USU Instruction 1100; 3) totals of part-time faculty (identified by name); 4) totals of off-campus faculty (civilian and uniformed off-campus faculty are identified and totaled by academic titles); and, 5) totals of civilian faculty with tenure or with tenure pending are identified by name. All of this information is broken out by Department or Activity; it is then combined and totaled for the School of Medicine or the Graduate School of Nursing; then, all totals are combined to form an inclusive summary for the University. A copy of the 2003 Annual Faculty Listing Report was provided on November 15, 2003, to the USU President, Deans, Department Chairs, Activity Heads, the USU Board of Regents (to include the Assistant Secretary of Defense for Health Affairs), and the USU Executive Committee (the Surgeons General and their staffs).

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OSD Joint Meritorious Unit Award Recognizes the Multiple Products of USU. On December 11, 2000, the Secretary of Defense awarded the Joint Meritorious Unit Award to the University. ***This significant award documents OSD's recognition of the essential mission, exceptional service over the past decade, and the multiple cost-effective programs of USU*** (the SOM, the GSN, Graduate Education Programs, Graduate Medical Education, Continuing Education for Health Professionals, the Military Training Network, Clinical Support for the MTFs, etc.). Public Law 92-426, *the Uniformed Services Health Professions Revitalization Act of 1972*, mandated that the University should meet the special needs of the Military Health System (MHS) through the provision of uniquely trained, career physician officers who would ensure continuity and leadership for the MHS. As validated by the Secretary of Defense in the citation for the Joint Meritorious Unit Award, the University has exceeded the goals set by the early visionaries who established USU.

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In addition to the Multiple Products and Services of USU, Four USU Programs Generated 29.3 Million Dollars of Cost-Avoidance, during 2003, for the Military Health System. Critical to the University's efforts for optimization, the Middle States Association of Colleges and Schools Commission on Higher Education has granted accreditation to USU from 1984 through 2013. This essential accreditation, with commendation, has enabled the University to support and generate cost avoidance for the MHS through its multiple educational programs, all of which are accredited by a total of thirteen independent accrediting entities, in addition to the Middle States Commission on Higher Education. In meeting the mandates of its establishing legislation and the standards for accreditation as an academic institution, ***USU provides multiple services and products for the Military Health System (MHS), all of which are recognized by the Office of the Secretary of Defense.***

The Alumni of the USU School of Medicine. (***Stated totals are effective through April of 2004***.) The principal product of USU continues to be its 3,421 USU SOM uniquely trained, career-oriented physicians who are prepared to practice military medicine in the multi-Service environment of USU; and, as a result, USU ensures continuity and leadership for the MHS; ***the 2,641 USU SOM alumni on active duty in the Armed Forces represent 22.2 percent of the 11,901 physicians on active duty in the MHS*** (the Army has a total of 4,218 physicians on active duty, of which, 1,056 are USU graduates; the Navy has a total of 3,983 physicians, of which, 789 are USU graduates; and, the Air Force has a total of 3,700 physicians, of which, 796 are USU graduates). In addition, 94 USU SOM alumni continue to serve on active duty in the United States Public Health Service, for a total of 2,735 USU SOM alumni who continue to serve their Nation in the Uniformed Services. The overall retention for USU SOM graduates from the first graduating Class of 1980, through April of 2004, is 80 percent; and, of the USU SOM alumni who have completed their residency training, almost one out of every two USU graduates holds an operational or leadership position.

The Graduate School of Nursing. ***As of April 2004***, the fully accredited USU Graduate School of Nursing (GSN) has provided 207 Masters of Science in Nursing Degrees to advanced practice nurse graduates through its MSN Program options in Nurse Practitioner and Certified Registered Nurse Anesthesia with over 80 percent remaining on active duty; ***as of April 2004, all 207 GSN graduates have passed their certification examinations with greater than a 97 percent pass rate on the first attempt***; during 2002, at the request of the Federal Nursing Chiefs, the GSN developed and received approval from the USU Executive Committee and USU Board of Regents to implement a Doctoral Degree Program in Nursing and a Perioperative Clinical Nurse Specialist option in the MSN Degree Program; students matriculated into both programs, during 2003.

Clinical Services Provided by USU/SOM/GSN on-site Faculty. In 2003, during their course of teaching, the USU faculty provided over 147,607 hours of clinical care at the Army, Navy, and Air Force Medical Treatment Facilities (MTFs) in the National Capital Area. ***As reported in the 2003 USU Cost Avoidance Fact Sheet, the annual, manpower cost avoidance generated by the USU faculty through this clinical support (147,607 hours) was conservatively estimated at $12,190,375***.

The SOM Graduate Education Programs. ***As of April 2004***, the SOM Graduate Degree Programs have conferred a total of 798 Basic Science Degrees. ***The annual cost avoidance generated by the USU SOM Graduate Education Programs for the MHS, as reported in the 2003 USU Cost Avoidance Fact Sheet, through the conferring of advanced degrees upon 41 uniformed officers, was estimated at $1,430,000***.

The USU Office of Continuing Education for Health Professionals and the Military Training Network. The USU Office of Continuing Education for Health Professionals (CHE), to include the Military Training Network (MTN), provides significant, cost-effective support for the MHS by facilitating the continued professional growth of health care professionals throughout the MHS. ***As reported in the 2003 USU Cost Avoidance Fact Sheet, because CHE and MTN bring training to the military health care providers, an annual, estimated cost-avoidance of $15,660,656 was generated during 2003 for the MHS***.

The SOM Office of Graduate Medical Education. The USU Office of Graduate Medical Education (GME) provides cost-effective support for the MHS in that it: serves as the Administrative Office and provides oversight for the National Capital Consortium (NCC); collects and evaluates data on DoD GME programs to ensure academic and scientific excellence; and, provides consultation and advice for the Dean of the SOM, the President of USU, and others on military-unique medical curricula. During 2003, all of the 65 GME programs in the National Capital Area were under the sponsorship of the NCC.

USU Serves as the Academic Center for the MHS. During 2003, USU continued to serve as the Academic Center for academic and research activities for 2,864 active-duty, off-campus USU faculty located throughout the MHS; USU on-site faculty have sponsored, hosted, or participated in the major conferences held by the MHS; in addition, military relevant consultation is continuously provided to the MHS and other Federal agencies by the internationally recognized experts within the University's multiple centers, departments, programs, and institutes. As addressed in this Section of the Journal, *the military-relevant research conducted at USU, in collaboration with many hundreds of off-campus USU faculty assigned throughout the MHS, addresses critical issues for the Armed Forces*. The knowledge documented by the on-site and off-site USU faculty through their collaborative research is opening new avenues to: enhance the quality of clinical care; and, better control, diagnose, protect, and provide treatment for millions of MHS beneficiaries.

(*All of these products and services are resourced as part of the operating cost of the University and are discussed throughout the USU Journal*.)

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Two Studies by the Center for Navy Analysis on Retention and Cost-Effectiveness Recognize the Critical Requirement for USU SOM Graduates. An example of the critical role of USU SOM graduates in the MHS was reported, during February of 2001, when the Center for Navy Analysis (CNA) provided data on medical retention to the Navy Surgeon General for use in his response to the Senate Appropriations Committee. The Navy Surgeon General informed the Congressional Committee that his most undermanned specialties were general surgery and all surgical subspecialties, orthopedic surgery, diagnostic radiology, anesthesiology, and urology. Many of these specialties are critical wartime specialties and shortfalls could have a negative impact on medical readiness. The Navy response stated the following... ***Overall, the median length of non-obligated service for physician specialists averages only 4.4 years. That average drops to 2.9 years when USU graduates are excluded; the median length of non-obligated service as a specialist for USU graduates is 9 years.***

In April of 2003, CNA released *Phase II: The Impact of Constraints and Policies on the Optimal-Mix-of-Accession Model* from its major study, *Life-Cycle Costs of Selected Uniformed Health Professions*. The second of six major CNA findings states... ***Policy-makers need to consider the costs and benefits for each accession source. For example, even though USUHS accessions are the most costly*** (when including all Federal costs, a 1995 General Accounting Report (GAO) found that USU and HPSP Scholarship graduates are comparable in cost)***, their better retention makes USUHS the most cost-effective accession source for filling 0-6 grade requirements in the MHS***. Thus the outstanding retention rates of USU SOM graduates ensure that critical wartime specialties are filled; medical readiness requires the continuity and leadership provided by the USU SOM alumni.

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Summary. The strengthened relationship of the University with OSD and OSD's recognition of the numerous cost-effective programs of USU is documented by the following: 1) the OSD surveys of 1997 and 1998, which officially recognize the multiple products, academic certification, and faculty credentials of USU; 2) the awarding of the Joint Meritorious Unit Award to USU by the Secretary of Defense, which specifically recognizes the multiple, cost-effective programs of USU; 3) the cost-avoidance generated by the University for DoD during 2003 (estimated at $29.3 million); and, 4) the two studies by the Center for Navy Analysis (CNA), which document both the outstanding retention rates of the USU SOM graduates and the resulting cost-effectiveness of utilizing USU alumni to fill leadership positions, throughout the MHS.

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ACADEMIC CENTER FOR THE MILITARY HEALTH SYSTEM

Following his service in both World War II and the Korean War and his review of the medical capabilities during the Vietnam War for the United States Senate, he became dedicated to preserving the lessons learned in military medicine; he concurred with *Congressman F. Edward Hebert's philosophy that America needed an academic home for military medicine...* USUHS became a part of his overall commitment to the preservation of the hard-won knowledge of the battlefield, the absolute priorities of preventive medicine, the tremendous achievements of uniformed research, and the need for an academic home for military medicine.

- **The Honorable Strom Thurmond, the United States Senate,** Congressional Record, *In Remembrance of Brigadier General Vorley (Mike) Rexroad, USAF (Retired)*, November 12, 2002, pages S10832-S10833.

Active-Duty, Off-Campus USU Faculty Total 2,864. Multiple USU academic and research activities contribute to the medical knowledge and technology base available to the MHS. During 2003, 2,864 active-duty, off-campus USU faculty members, throughout the MHS, collaborated with the University through academic and research efforts. ***Through these collaborative efforts, USU serves as the Academic Center for those military medical officers and health care providers who seek to advance their military careers and their knowledge of uniformed health care.*** For their valuable service to the University, these active duty, off-campus faculty members are awarded appropriate academic rank. **This section provides selected examples of military relevant conferences or academic activities sponsored by, or collaborated with, the University; all of which document why USU is serving as the Academic Center for Military Medicine.**

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2003 Proceedings of the 16th Conference on Military Medicine - Enhancing Readiness: Implementing Change in Military Medical Education. The University continued to serve as the Academic Center for Military Medicine through the planning, presentation, and publication of the proceedings for the 16th Conference on Military Medicine - *Enhancing Readiness: Implementing Change in Military Medical Education*, which was held on the USU campus from June 17-20, 2002, with 120 attendees. The military medicine conferences are annual continuing education activities, which focus specifically on current challenges facing military medicine. Distinguished speakers included senior representatives from Health Affairs, the Offices of the Surgeons General, the Army Medical Command Center, and USU. Conferees were divided into four working groups to focus on ***four key aspects of military medical education*****:** *content*; *methods of learning*; *outcomes measurement*; and, *certification*. Four objective areas were prioritized and provided a framework for the identification of key curricular components; ***the four objectives were*****:** *Emerging Technologies*; *Emerging Threats*; *Ethical Considerations*; and, *Changing Missions and Operations*. The content group built directly upon

the foundation laid by participants in the 15th Annual Conference on Military Medicine (held in June of 2001). Despite overlap among the four areas, the division into four areas provided a useful framework for the identification of key curricular components. Objectives within each domain were categorized as *need to know*, *ought to know*, and *nice to know*; they were then further prioritized within each of those categories. This provided a guideline for inserting elements into the continuum of military medical education; however, the participants did not identify areas that might be cut back within the current curriculum. ***An Executive Curriculum Committee under the leadership of the Dean, USU SOM, was identified to coordinate the incorporation of these recommendations as part of an on-going process of curriculum renewal***.

The Proceedings of the 16th Annual Conference on Military Medicine were published in Military Medicine, the International Journal of AMSUS, Volume 168, No. 9, September 2003. Nine articles were published in the AMSUS Journal: 1) *Perspectives on Military Medicine*; 2) *Anthrax: Lessons Learned from the U.S. Capitol Experience*; 3) *Surgical Simulation: A Clinical Perspective*; 4) *Assessment and Outcomes in Medical Education*; 5) *Opportunities for Certification in Military Medicine*; 6) *The Future of Medicine in the U.S. Marine Corps*; 7) *Military Unique Curriculum: Identifying and Prioritizing Content*; 8) *Measuring Outcomes for Military Medical Education*; and, 9) *Certification in Military Medicine*. This documentation now serves as a resource for the entire MHS and is being utilized by the USU SOM, during on-going curriculum reviews, to ensure that the USU SOM graduates are appropriately trained to meet the special requirements of military medicine.

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Activities of The Center for the Study of Traumatic Stress, USU SOM Department of Psychiatry. The USU SOM Center for the Study of Traumatic Stress, CSTS, established in 1987, is continuously sought out, both nationally and internationally, for its consultative, educational, and research capabilities in the area of traumatic stress. During 2003, the CSTS continued to conduct research on the neurobiology of traumatic stress and the psychological and behavioral responses to such events as the attack on the *USS Cole* in October of 2000, the attacks on the Twin Towers and the Pentagon in September of 2001, the October 2002 Sniper attacks in the Washington, D.C. area, and the on-going war in Iraq. Twelve major projects were funded during 2003, with over six million dollars, from the following sources: the Department of the Army; the National Institutes of Health; the National Alliance for Research on Schizophrenia and Depression; the National Alliance for the Mentally Ill Research Institute; the National Institute on Drug Abuse; the Substance Abuse and Mental Health Services Administration of the Department of Health and Human Services; the Stanley Foundation; and, the United States Marine Corps. The Director of the CSTS, **Robert J. Ursano, M.D., Professor and Chair, USU SOM Department of Psychiatry, Director, USU Center for the Study of Traumatic Stress,** served on the Institute of Medicine Committee on Responding to the Psychological Consequences of Terrorism. ***His military unique expertise was instrumental in developing and advancing a national strategy that integrates mental health into a public health paradigm for terrorism management and response.*** This new model is of substantial consequence as it demonstrates how *disaster psychiatry*, a singular specialty significantly contributed to by the forging of military medicine and USU faculty health care leaders in the 1980's, has become recognized, valued and regarded as an integral component for strengthening homeland security in this Century. The Committee's recommendations have been

published in Preparing for the Psychological Consequences of Terrorism: A Public Health Strategy, the National Academies Press, Washington, D.C., 2003. (*See Section II, RESEARCH CENTERS AND PROGRAMS and STRATEGIC GOALS in Section I, for additional contributions of the CSTS, during 2003*.)

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USU Center Participates in a Three-Day Conference in Laredo, Texas, "Los Dos Laredos." The USU Center for Disaster and Humanitarian Assistance Medicine (CDHAM) was established in 1998, under the USU SOM Department of Military and Emergency Medicine, to advance the understanding and global delivery of disaster medical care and humanitarian assistance. During 2003, CDHAM personnel attended a conference entitled, ***Binational Communication to Enhance Public Health***, in Laredo, Texas, which addressed issues of public health safety along the United States and Mexican Border. The CDHAM presentation, ***Response to Bioterrorism with High Technology***, promoted commercial, off-the-shelf technologies in telemedicine that are evaluated as part of CDHAM's Operations and Technology Cell for use in consequence management settings. The conference had over 250 attendees and was affiliated with the United States-Mexico Border Health Association (USMBHA), which the CDHAM has supported over the past three years. The CDHAM also took part in a five-day symposium, ***Bioterrorism and Emerging Infectious Diseases Conference***, in Mexico City, Mexico, which was hosted by the United States Navy, Office of Naval Research. **Craig H. Llewellyn, M.D., Professor and Past Chair, USU SOM Department of Military and Emergency Medicine, Director, USU Center for Disaster and Humanitarian Assistance Medicine,** presented lectures concerning bioterrorism and consequence management in relation to humanitarian assistance/disaster response. In addition, the CDHAM Director was a member of a team engaged in bilateral United States - Mexico meetings concerning critical infrastructure protection in Mexico City, Mexico. (*See Section II, RESEARCH CENTERS AND PROGRAMS, and STRATEGIC GOALS in Section I, for additional contributions of the CDHAM, during 2003*.)

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10th Annual Faculty Senate Research Day and Graduate Student Colloquium - 2003. The 10th Annual Faculty Senate Research Day and Graduate Student Colloquium were held at the USU campus on May 14-15, 2003. This year's theme was ***From Bench to Bedside and Battlefield: Translational Research at the Nation's Medical School***. This theme focused on an important area in biomedical research - the need to bridge the gaps between scientific knowledge and clinical practice; and, it also reflected USUHS' special role in both civilian and military biomedical research. The two-day event brought approximately 250 individuals to the USU campus, including researchers from affiliates such as the National Naval Medical Center, the Walter Reed Army Medical Center, the National Institutes of Health, the Howard Hughes Medical Institute, and the Centers for Disease Control and Prevention, as well as other prominent DoD organizations, and civilian universities and hospitals. **Elias Zerhouni, M.D., Director of the National Institutes of Health,** delivered the Plenary Lecture.

On May 14th, two symposia were presented: *New Confidentiality and Privacy Regulatory Requirements in Human Research: Use of Tissues, Tissue Banking, Databases, Consent Forms and*

Everything Else (chaired by **Richard L. Levine, Ph.D., Assistant Vice President for Research,** and presented by **Eric Marks, M.D., Professor, USU SOM Department of Medicine, and Associate Dean for Faculty Affairs)**; and, *Brain Injury - The Disease Amongst Us*, which consisted of four presentations by accomplished individuals from USU (**Denes V. Agoston, M.D., Ph.D., Associate Professor, USU SOM Department of Anatomy, Physiology and Genetics,** and **Geoffrey Ling, M.D., Ph.D., LTC, MC, USA, Professor, USU SOM Department of Neurology**) and the National Institutes of Health (**Jordan Grafman, Ph.D., National Institute of Neurological Disorders and Stroke,** and **John Hallenbeck, M.D., National Institute of Neurological Disorders and Stroke**). The topics of the symposia presented on May 15th (*Emerging Proteomics: Techniques and Applications*; *Biological Response to Hemorrhage: Recent Advances on the Bench and the Battlefield*; *Forefront of Imaging Techniques in Clinical and Basic Science*; and, *The Obesity Epidemic: Scope and Clinical Approaches*) were selected to highlight areas in military and civilian medicine that present particular challenges for translational research. In addition to 35 oral presentations, there were more than 150 poster presentations featuring the research work of the USU community.

The Graduate Student Colloquium was established, in 1980, to promote scholarly interchange between graduate students and the academic community at USU and to recognize the research achievements of USU graduate students. The 2003 Graduate Student Colloquium featured a Career Development Workshop on opportunities for graduate students, symposia, and the *John W. Bullard Lecture*. Six oral presentations by graduate students were followed by *The 2003 Bullard Lecture*, which was presented by **John D. Gearhart, Ph.D., Developmental Genetics Laboratory, Johns Hopkins University;** the title of his presentation was *Human Embryonic Germ Cells: Differentiation and Transplantation*.

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ORGANIZATIONAL CULTURE

STEWARDSHIP: We will protect and enhance the human and physical resources of the University, optimize productivity, promote a sense of family and community, while emphasizing flexibility in response to changing world conditions.

- **USU Strategic Plan**, Goal 5, approved by the USU Board of Regents during May of 2003.

Continuous Efforts to Ensure a Diverse Community that Is Powerful, Committed, and Energized. A common challenge for most educational institutions is the goal to recruit and retain highly qualified students, faculty, and staff. As USU works to achieve that goal, it must also strive to reflect the diversity that exists in both the Uniformed Services and our Nation. The five USU Offices of University Recruitment and Diversity (ORD), Student Affairs (OSA), Civilian Equal Employment Opportunity (EEO), Military Equal Opportunity (EO), and the Brigade Commander (BDE) collaborated with the Civilian Human Resources (CHR) Directorate, during 2003, to ensure that the University continued to promote respect, appreciation, and understanding throughout its multi-Service activities. During 2003, the University's emphasis was on encouraging cooperation, development, diversity, communication, and collegiality by: 1) the identification and encouragement of equal opportunity principles and diverse cultures through numerous university forums, individual counseling sessions, recruitment strategies, and community service activities; 2) the timely sharing of relevant information through continuing orientation programs, on-going USU publications, educational web sites, and advanced technology; and, 3) the provision of extensive development and recognition programs for the civilian and uniformed members of the USU family.

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Communicating Equal Opportunity Principles and Appreciation of Diversity.

1,250 USU Personnel Participate in Six Community Events. During 2003, the USU Office of Equal Employment Opportunity (EEO), with the volunteered-support of the USU Special Emphasis Program Managers, continued to present USU Community Sessions to reinforce both the understanding of, and the appreciation for, the cultural diversity that exists throughout the University. The *January 2003 Dr. Martin Luther King Jr. Birthday Celebration: Remember! Celebrate! Act! A Day On, Not A Day Off!*, featured **Mr. Thomas C. Bryant, Jr., Director, TCB Corporation**, who presented the Keynote Address to over 200 faculty, staff, and students from the USU community. Continuing in the tradition of cultural awareness at the University, throughout the month of February, a series of e-mails were distributed to the USU community recognizing National Black History Month. The e-mails offered the opportunity for everyone to discuss the achievements and contributions of prominent African Americans in our society and provided pertinent information on related cultural events in the National Capital Area. On March 14, 2003, ten members of the USU family accepted an invitation from the Under

Secretary of Defense for Personnel and Readiness to attend an observance in recognition of National Women's History Month; these individuals attended the dedication of the Women in Military Service For America Memorial at the Arlington National Cemetery. And, members of the USU EEO staff planned and organized a trip for 30 individuals to visit the National Holocaust Memorial Museum, in Washington, D.C., on April 30, 2003. On May 7, 2003, 60 members of the USU family met to acknowledge *Asian American/Pacific Islander Month; the 2003 theme was: Salute to Freedom*. One of the USU family members, **CAPT Cynthia Macri, MC, USN, Vice President, Recruitment and Diversity,** and special guest, **Doctor Takumi Izuno, International Agricultural Advisor (Retired),** delivered a moving message describing their vision for the new Millennium from their perspective as Asian-Americans; the audience participated during an enthusiastic discussion session following the presentation. Then, on September 10, 2003, 50 members of the USU community met to recognize *Hispanic Heritage Month; the 2003 theme was: Honoring Our Past, Surpassing Our Present, and Leading Our Future*. The Keynote Address was presented by **Doctor Alfonso R. Batres, Chief Officer, Readjustment Counseling Service, Veterans Health Administration**. The presentation was followed by a discussion session with audience participation. Also, during September of 2003, coordination by the **USU Brigade Chaplain, CDR Kevin Bedford, USN**, resulted in, *A Day of Remembrance: To Honor the Memory of the Victims of the Terrorist Attacks on September 11, 2001*; the event acknowledged the second anniversary of the terrorists' attack on our Nation. The USU family either gathered together to share a moment of silence, or remained at their work stations to view a tribute distributed via the USU web site; all demonstrated their respect and sense of loss for those whose lives were ended by the violent event.

Student Professional Activities and Meetings. The coordinating efforts of the USU Office of Recruitment and Diversity (ORD) with members of the four student groups: ***the Asian Pacific American Medical Student Association (APAMSA)***; ***the Student National Medical Association (SNMA)***; ***Women in Medicine and Science (WIMS)***; and, ***the American Medical Student Association (AMSA)*** resulted in the successful sponsoring of numerous meetings and activities, throughout 2003. Membership is open to all students; and, all USU students are encouraged to attend programs sponsored by these organizations. The objectives, programs, activities and officers for all of the ORD-sponsored student groups can be viewed on the USU web site at <*www.usuhs.mil*> by clicking on the *Recruitment and Diversity Link*, followed by a second click on *Student Organizations*. During 2003, students were provided with an opportunity to socialize and network with faculty and physicians in a relaxed atmosphere; opportunities were provided for discussing important issues such as residency selections, physician and patient expectations, professional demands in the military setting, effective time management, and societal minority and gender issues.

The ***USU Chapter of the Asian Pacific American Medical Students Association (APAMSA)*** is a student organization, which was initiated under the sponsorship of ORD, during 2001, and functioned throughout 2003. The APAMSA was founded, in 1995, and represents over 16,000 Asian Pacific American medical students; the organization serves as an advocate for the advancement of quality medical care for the growing Asian Pacific community. In November of 2003, the USU APAMSA Chapter co-hosted the 10th Annual Meeting of APAMSA along with APAMSA Chapters from Johns Hopkins University, Georgetown University, the University of Maryland, and George Washington University; the event was held on the campus of the George Washington University Medical Center. The USU Chapter developed the program and coordinated the selection and approval of speakers for the meeting. Also, during 2003, the USU medical students continued their weekly and/or monthly trips to public schools (elementary,

middle and high schools) to discuss medicine, science, research, and the medical profession with young students through a community outreach program entitled, the ***Youth Science Enrichment Program (YSEP)***. The YSEP is designed to motivate America's youth toward medical, scientific, and military careers; USU students serve as role models for the youth with whom they interact. Plans for 2004 were developed to strengthen the USU student presence among four area high schools located in underserved areas of the Washington Metropolitan Area. (*See THE OFFICE OF RECRUITMENT AND DIVERSITY, which follows in this Section of the Journal, for further discussion on these ORD activities*.)

Provision of Formal and Informal Counseling. The USU Offices of Equal Employment Opportunity (EEO), Equal Opportunity (EO), Recruitment and Diversity (ORD), and Student Affairs (OSA) continued to provide formal and informal counseling throughout the Year 2003. The EO Office did not have to provide formal counseling sessions to the uniformed members of USU, during 2003; the EEO Office provided five informal counseling sessions to the USU civilian staff, during the past year. Beginning in September, OSA conducted well over 300 formal interview and counseling sessions for the first and third-year medical students; in addition, ORD also continued to provide individual counseling sessions for numerous uniformed students. The success of these counseling sessions is evidenced by the ever increasing appreciation and respect shared among the individual members of the University. In addition, the EO representatives for the USU Brigade provided EO training for all uniformed members of the University, during 2003; the training sessions addressed diversity, acceptance of others, management of difficult situations, and the identification of harassment in both the work place and in the academic setting.

Faculty Senate Outreach Program for Working Mothers. In response to recommendations of the USU faculty and the President of the Faculty Senate, the Office of Administration and Management coordinated the construction and establishment of a Mother's Lactation Room to assist working mothers, who wish to continue breast-feeding their babies after returning to work. The room provides for privacy and is equipped with appropriate furniture, electrical outlets, and a refrigerator for the storage of expressed milk. At the time of its establishment, during 2000, USU was the only DoD entity to provide such a facility. The program continued, throughout 2003.

The USU Center for Health Disparities Research and Education - *Project EXPORT*. The Liaison Committee on Medical Education (LCME) has stated that medical school faculty and students need to address gender and cultural biases in the delivery of health care and, in general, prepare providers to care for diverse patient populations. Under the direction of **Evelyn L. Lewis, M.D., (CDR, MC, USN, Retired), SOM Department of Family Medicine,** and **Richard Tanenbaum, Ph.D., SOM Department of Medical and Clinical Psychology,** USU has developed a biopsychosocial training program for medical students and residents, nursing students, clinical/medical psychology graduate students, and other prospective health care professionals, faculty, and staff. The ***USU SOM Center for the Enhancement of Healthcare Training and Outcomes (CEHTO)*** enables the University to comply with the LCME requirements and improves USU's curricula by providing training to optimize patient adherence and enhance health care outcomes. Specifically, CEHTO has been established to: 1) infuse concepts and processes into existing curricula in order to advance a biopsychosocial philosophy and improve cultural proficiency; 2) provide a forum in which students have the opportunity to practice the

skills and strategies addressed in the classroom; 3) facilitate the development of culturally respectful relationships, inside and outside of the USU community; and, 4) evaluate the impact of this initiative and continuously improve and refine the training provided.

During 2003, the University and the SOM Departments of Family Medicine and Medical and Clinical Psychology applied for, and successfully received, a substantial grant from the National Institutes of Health to sponsor the ***USU Center for Health Disparities Research and Education***, referred to as ***Project EXPORT***. **Evelyn L. Lewis, M.D., is the Principal Investigator on the NIH grant**; and, **Richard Tanenbaum, Ph.D., serves as the Co-Principal Investigator and Project Director**. **David S. Krantz, Ph.D., Professor and Chair, USU SOM Department of Medical and Clinical Psychology, is the Center Director**. As part of *Project EXPORT*, CEHTO will assist in meeting the following objective: to develop workshops and other educational forums that focus on disseminating critical knowledge about health disparities and teaching practical skills in order to maximize culturally proficient health care service delivery. As the staff of *Project EXPORT* work to solidify their operational infrastructure, the new Center is focused on its mission to work with current and future partners, both within the USU and the external community, to collaboratively achieve the best possible health care and treatment outcomes for minority and underserved populations. (*See CURRICULUM RENEWAL and RESEARCH PROGRAMS AND CENTERS in Section II of the Journal for further information on Project EXPORT*.)

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Timely Sharing of Information.

The USU Web Is Used to Provide Information Throughout the USU Community. During 2003, the Department of Biomedical Informatics (BID), under the direction of **A. Leon Moore, Ph.D., Professor and Chair, USU SOM Department of Biomedical Informatics,** continued to support the University's educational efforts through its Center for Informatics in Medicine (CIM). Today, CIM hosts over 100 educational web sites for the University; these sites serve on-site and distance learning students, residents, and faculty. Significantly, the Department continued its support for the USU PDA Initiative. Personal Digital Assistants (PDAs) have been issued to three classes of School of Medicine (SOM) and Graduate School of Nursing (GSN) students. The USU PDA Initiative was highlighted at the Symposium of the American Medical Informatics Association, in November of 2002, resulting in the publishing of a paper, *The USU Medical PDA Initiative: The PDA as an Educational Tool*, during 2003. BID continues to fulfill its responsibility for the Clinical WebLog <*http://cweblog.usuhs.mil/*>, which is used by USU SOM students to document experiences, during their clinical years. *CWebLog* is currently used by seven third-year clerkships with access via a web browser and the PDAs issued to the SOM and GSN students. With assistance from the SOM Preventive Medicine and Biometrics (PMB) faculty and the USU Learning and Resource Center (LRC) staff, during 2003, the BID established its second course, *BID-510, Introduction to the Department*, which organizes and teaches *MCB-501, Introduction to Computers for Bioinformatics Computer Skills*; the new course was implemented, during 2004. The Department also continues to support the establishment of a high performance research network at USU, *Internet2*. The BID connection to *Internet2* became operational through the National Library of Medicine and has hosted multiple demonstrations from its USU laboratories.

The 2002 Edition of the USU Journal. To ensure that information was shared with both internal and external customers, the University published and distributed more than 800 copies of the 2002 Edition of the USU Journal, during 2003. Each copy included a CD-ROM; and, all 331 USU faculty members received a copy of the Journal in CD-ROM format. Each Edition of the USU Journal provides an inclusive background on the history and development of the University; it also describes the achievements of the past year and any changes, which may have taken place throughout USU's educational programs, centers, and institutes. The Journal, sometimes referred to as ***The USU Encyclopedia***, serves as a source document for the University's responses to congressional, executive, and general requests for information, throughout each year. This annual report, coordinated by the Vice President for Administration and Management with the University President, documents how relevance, readiness, and optimization are successfully emphasized throughout the University's programs and activities and assesses how the goals of the USU Strategic Plan have been met, during the past year. Numerous letters of acknowledgement and accolades have been received by the University since its initial distribution; selected examples include: the USU Deans, Department Chairs, and Activity Heads; the Deputy Secretary of Defense; the Secretary of the Air Force; the Chairman of the Joint Chiefs of Staff; the Chief of Naval Operations; the Commandant of the Marine Corps; the Surgeons General of the Army, Navy, Air Force, and the United States Public Health Service; the American Medical Association; and, the current Secretary of State.

USU Orientation Program. Since October of 2000 through 2003, the USU Civilian Human Resources Directorate, with the participation of the senior leadership at USU, has sponsored formal sessions of the USU Faculty and Staff Orientation Program for 413 in-coming civilian and uniformed members of the University community: 45 during 2000; 92 during two sessions held in 2001; 119 during three sessions held during 2002; and, 157 trained during 2003. ***The purpose of this on-going program is to present the newly-appointed members of the USU community with the philosophy, goals, policies, and leadership principles of USU***. Orientation packets with key facts and other selected information, to include the CD-ROM for the current USU Journal, are provided for review and future reference. For example, the USU Office of Environmental Health and Occupational Safety (EHS) briefs the new employees on its initiatives to raise the safety consciousness of the USU researchers and the general community. In addition, since February of 2000, the SOM Office of Faculty Affairs has maintained a Faculty Handbook on the USU web site, which describes the organization and functions of the various components of the University; it serves as a quick guide for the delegation of responsibilities at the University and where to seek information, guidance, or other faculty-related requirements. New faculty members are introduced to the USU web site and encouraged to utilize the above-mentioned information. Since its establishment, the USU Orientation Program continues to successfully promote a positive experience for the new employees and allows them to meet the senior management of USU; orientation sessions are continuing, during 2004.

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Personal Development and Retention.

Individual Recognition. Throughout 2003, the USU community worked to build and strengthen cooperation, integrity, trust, and collegiality as well as to reward individual members for their

contributions. An on-going performance evaluation process developed by the Civilian Human Resources Division (CHR) and the Brigade Command ensured that each USU employee received an annual rating and appropriate recognition for his/her accomplishments. During 2003, CHR continued its procedures for tracking individual employee's years of service. The University President personally presented service awards to designated employees at their work sites. The program has been well received; to date, 108 civilian service awards have been presented. And, during 2003, the Office of Military Personnel approved, processed, and presented 92 awards for the USU military personnel: 1 Joint Meritorious Unit Award; 2 Defense Superior Service Medals; 49 Defense Meritorious Service Medals; 20 Joint Service Commendation Medals; 16 Joint Service Achievement Medals; 3 Army Commendation Medals; and, 1 Military Outstanding Volunteer Service Medal.

Training Opportunities Provided to USU Employees. During 2003, the USU Offices of Civilian Human Resources (CHR), Medical Education (MEE), Faculty Affairs (ADF), Research Administration (REA), the Brigade Command (BDE), University Recruitment and Diversity (ORD), Equal Employment Opportunity (EEO), and Equal Opportunity (EO) provided programs and support to assist the University community in its self-development and training requirements. Civilian Human Resources continued to expand the USU Mentor Program by sponsoring 23 participants; both the participants and their mentors received on-going training and guidance, throughout 2003. CHR also sponsored the establishment of a University Toastmasters International Club, in 1999; active participation continued, during 2003, with 25 members. The Executive Leadership and Aspiring Leader Programs have been on-going for some years; four individuals participated, during 2003. Six individuals, who participated in past years, received promotions and were hired at other Federal agencies; and, nine of fifteen participants were eventually promoted and remain at the University. In addition, numerous training opportunities were provided by CHR to the USU civilian work force that were linked closely with the establishment and expansion of Individual Development Plans. *CHR used 140 training vouchers during 2003 and 60 on-line subscriptions for computer-related training for the Microsoft Office Suite*. Through the use of vouchers, USU faculty and staff were provided opportunities to attend off-site computer classes through CompUSA and New Horizons. USU employees were also provided an on-line computer training option through a USU contract with Element University; on-line training allows the student to complete assignments, through the Internet, while at home or at work. *A total of 634 employees were trained on-site*, to include the 150 attendees at the Ethics Training Classes, which were conducted by the Office of the USU General Counsel. On-Site Classes provided by CHR included: *Customer Service* (63 participants); *Basic Personnel Management* (40 participants); *Powerful Communication Skills* (44 participants); *Retirement Planning* (24 participants); *Resume Training* (41 participants); *Supervisory Training* (60 participants); and, *GSA Travel Training* (55 participants).

USU Faculty Attend Development Courses and Seminars. During 2003, **Cindy C. Wilson, Ph.D., Professor, USU SOM Department of Family Medicine,** coordinated, on behalf of her department, with the SOM Offices of Faculty Affairs and Medical Education, to sponsor numerous courses and seminars, which strongly supported faculty development at the University. ***During 2003, 232 attendees earned over 359 hours of continuing education.*** The following are selected examples of the successful activities during 2003, which led to the enhancement of the professional skills of the USU faculty members: 1) *Publishing in Clinical Journals*; 2) *Endnote Survival Strategies*; 3) *Ethics in Clinical Practice*; 4) *Issues in Medical Education*; 5) *The Problem Learners*; 6) *Writing for Impact*; 7) *Meta Analysis in Clinical*

Trails; and, 8) *Presenting Clinical Data*. In addition, the Vice President for Research continued to conduct classes for the USU faculty on the submission of research proposals, throughout 2003.

USU Health Center Tobacco Cessation Program. Established during 2002, and on-going during 2003, the USU Health Center Tobacco Cessation Program is a four-session program designed to help individuals to quit using tobacco products. Most individuals requesting tobacco cessation assistance are cigarette smokers; but, individuals who use smokeless tobacco (dip or chewing tobacco), pipes, cigars, etc., may enroll in the program. The lead for the USU Tobacco Cessation Program for uniformed personnel is **Major Nicole L. Frazer, Ph.D., USAF, BSC, Assistant Professor, USU SOM Department of Family Medicine, and Director, Clinical Health Psychology**; she can be reached at <*nfrazer@usuhs.mil*>.

The program is based on the guidelines established by the Agency for Health Care Policy and Research (AHCPR; 1996); the Clinical Practice Guideline for Treating Tobacco Use and Dependence (United States Public Health Service; 2000); and, the VHA/DoD Clinical Practice Guideline for Promotion of Tobacco Use Cessation in the Primary Care Setting (2001). The program consists of at least four sessions with the provider including the enrollment session, the quit date session, and two follow-up sessions. The program is a comprehensive behavioral treatment program, which involves behavior modification, stress management skills training, and the use of medications. Six weeks of nicotine replacement therapy involving the nicotine patch are available as part of the program for those participants who are medically qualified. Zyban (buproprion) is also available for eight weeks, beginning with the first enrollment session. Individuals must participate in the tobacco cessation program and attend the sessions to obtain the medications. Research indicates that these medications do not work unless combined with a comprehensive behavioral treatment program. A data base has been created so that all participants can be entered and tracked at three, six, and twelve months following their *quit date*. It is conservatively estimated that twelve individuals have quit smoking since November of 2002, when the program was initiated. Civilian employees at the University, who wish assistance with ending their use of tobacco products, may contact the University Environmental Health and Occupational Safety (EHS) staff at <*asorrels@usuhs.mil*>.

OSD Confirmation of USU Title 10 Authority. During Fiscal Years 1997 and 1998, there had been a one-year suspension on the inclusion of allowances in the calculation of retirement benefits for the USU Administratively Determined (AD) employees (faculty and staff) who are covered under TIAA-CREF, Fidelity, or any other retirement system not established under Title 5 U.S.C. This issue, which involved USU's Title 10 authority, was resolved with OSD through the coordinated efforts of the OSD Office of the Deputy Assistant Secretary for Civilian Personnel Policy, Washington Headquarters Services, the USU President, and the USU Vice President for Administration and Management. As a result, the inclusion of allowances in the calculation of benefits for USU AD employees was reinstated by OSD for Fiscal Year 1999 and has been continued through the present; current 2004, OSD-approved, AD salary schedules include footnote references that confirm the reinstatement of this benefit.

Legislative Language Removes the Limits of Executive Level IV for the Annual Rate of Basic Pay. Previously, the annual rate of basic pay for USU AD employees was limited to be no more than the rate set for Executive Level IV. In many cases, this limitation resulted in the need for allowances to bring

the total pay up to the limits established by OSD in the USU salary schedules. During the last quarter of Fiscal Year 1998, and following extensive coordination by the Vice President for Administration and Management, the OSD Office of the General Counsel, at the request of the Deputy Assistant Secretary for Civilian Personnel Policy, recommended the legislative change contained in Section 1108 of the Conference Report for the National Defense Authorization Act for Fiscal Year 2000. As a result, when the Authorization Bill for Fiscal Year 2000 was signed, it effectively removed the limitations of Level IV for the USU AD employees; ***as appropriate, the upper pay limits of the USU AD salary schedules are now limited to the rate set for Executive Level I***. This has proven to be a valuable tool for the recruitment and retention of essential faculty and staff by the USU President and Deans. Implementation actions for the reduction of allowances were initiated and implemented, during 2000, by CHR and continued, as appropriate, during 2003, to the present.

USU Administratively Determined Salary Schedules Are Approved. Previously, the USU salary schedules for the Administratively Determined (AD) employees had remained the same from 1993 through 1997. To address this concern, a Memorandum of Understanding signed by the OSD Office of Civilian Personnel Management Services (CPMS), the Navy Bureau of Medicine, and the USU President successfully resulted in the implementation of annual comparability studies by CPMS. These comparability studies, completed in coordination with the USU Civilian Human Resources Directorate and the USU Faculty Senate Comparability Committee, serve as a critical component in the on-going review, updating, and implementation process for the USU AD salary schedules. As an example of the implementation procedures, when the Principal Deputy Assistant Secretary of Defense (Force Management Policy) approved salary schedules for the USU AD employees on August 25, 1999, an increase in base pay was automatically provided for any AD employees whose base pay was lower than the minimum limits of the new salary scales; this process, based on currently approved salary schedules, has been continued to the present. Updated salary schedules have been continuously approved, since 1998, as follows: in July of each year, revised and OSD-approved salary schedules are effective and implemented based on current data and the CPMS comparability studies; then, in January of each year, the salary schedules are adjusted by CPMS to implement the Executive Level I pay level, as required. The salary schedules were updated during January of 2004 to reflect the current pay level of Executive Level I.

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University Recruitment and Diversity.

OBJECTIVE: USU will recruit, reward, and retain outstanding and diverse students, faculty, and staff.

- **USU Strategic Plan**, Goal 5, First Objective, Goal 5, Approved by the USU Board of Regents in May of 2003.

Office of University Recruitment and Diversity. The USU Office of Minority Affairs was established, in 1991, with a mission to increase the participation and advancement of traditionally underrepresented minority and women students, faculty, and staff at the University. The Office of Minority Affairs, under the initial leadership of **Jeannette E. South-Paul, Colonel, MC, USA, Vice President for Minority Affairs**, established numerous programs to especially increase the recruitment and retention of underrepresented minorities at the University. Following COL South-Paul's selection to serve as Chair, SOM Department of Family Medicine, **Charles W. Campbell, Jr., Colonel, USAF, MC, FS,** served as the second USU Vice President for Minority Affairs. In April of 1999, **Carolyn L. Miller, Lieutenant Colonel, USAF, BSC,** was selected as the third USU Vice President for Minority Affairs. During 1999, following extensive discussions with the USU President and the Board of Regents, the University's Strategic Plan was modified to specifically address University recruitment and diversity. Subsequently, during 1999, the Office of Minority Affairs was renamed as the Office of University Recruitment and Minority Affairs; during 2000, strategy sessions to enhance the recruitment efforts of the University resulted in a decision to further modify the office title to the Office of Recruitment and Diversity (ORD). The USU Strategic Plan has continuously retained strategies for both marketing the University and targeting the increased recruitment of women and underrepresented minorities. The Office of Recruitment and Diversity (ORD) has remained committed to increasing the general public's awareness of the University; thus, ORD has continued to market the University and introduce military medicine, USU, and the United States Public Health Service to prospective applicants. By the end of 2001, the following areas were included among the numerous program responsibilities of ORD: on-going recruitment efforts; retention and student support activities; community service; and, the USU Post-Baccalaureate Program.

During 2002, the ORD Mission continued to direct that the USU student body, to the extent possible, should reflect the gender and ethnic representations as found in the Armed Forces of the United States. Following the departure of LtCol Miller on July 31, 2002, a change in leadership occurred with the September 26, 2002 announcement by the USU President of his selection of **Cynthia I. Macri, CAPT, MC, USN, Director of the Health Professional Scholarship Program (HPSP), Naval Medical Education and Training Command (NMETC), to serve as the USU Vice President for Recruitment and Diversity.**

The USU Office of Recruitment and Diversity, ORD, received a significant *shot in the arm*, when the Vice President of ORD began to serve on a full-time basis, at USU, in July of 2003. Under the leadership of CAPT Macri's results-oriented management system, ORD is developing new initiatives in support of the University's Strategic Plan, utilizing her experience, information, and validated recruitment

strategies. CAPT Macri's previous position at the Naval Medical Education and Training Command (NMETC), where she served as the Navy's Director of Medical Department Accessions, included the Armed Forces Health Professions Scholarship Program (AFHPSP) and the Health Professions Loan Repayment Program (HPLRP).

Alumni Liaison Program. The USU Liaison Program involves the recruitment of medical school applicants by USU SOM alumni; these USU SOM alumni serve as superb representatives of the University. During 2003, ORD improved on the already existing Alumni Liaison Program by creating and sending congratulatory letters, under the signature of the University President, to all alumni newly selected to the 0-5 and 0-6 levels. In addition, the letters requested that the alumni partner with ORD, in its various recruitment initiatives. **Ms. Sharon Willis, USU Office of Alumni Affairs,** provided contact information for more than 100 medical officers, who had been newly selected for promotion. Over 25 positive responses were received, resulting in the expansion of alumni volunteers for assisting with recruitment, mentoring, and increasing the visibility of the USU SOM within their individual communities. During 2003, there was an increased effort to utilize human resources efficiently and to share recruitment opportunities with representatives from the Recruiting Commands of the three Armed Services. In addition, both USU and AFHPSP alumni volunteers travel with their local area recruiters and make presentations at undergraduate institutions, *pre-med* groups, and health professions career fairs; these volunteers provide an accurate and realistic assessment of their lives as military physicians.

Provision of USU Recruitment Materials and Recruitment Activities. USU recruitment materials were periodically sent to prospective applicants, throughout 2003. The ORD staff continuously reviewed requests for participation in various recruitment activities, from both national and regional organizations, as well as from individual institutions, from the perspective of cost-effectiveness. Local AFHPSP recruiters were invited to participate, or asked to present information, reference both USU and the AFHPSP, on opportunities for careers in military medicine. Undergraduate Reserve Officer Training Corps (ROTC) Units at various colleges and universities were also contacted when ORD initiated planning for recruitment trips. It was determined, by the ORD staff, that most of the students enrolled in ROTC Units were already familiar with military training and Service etiquette and only required additional information on medical training requirements and potential careers in medicine.

During 2003, ORD, as the centralized office for the recruitment of qualified medical officers, responded to over 700 requests for the continued replenishment of USU and AFHPSP materials. These materials were mailed to Pre-Health Professional Organizations, Reserve Officers Training Corps (ROTC) Units, high school students who visited USU as part of youth summer programs, career fair organizers, undergraduate institutions nationwide, Uniformed Services personnel deployed abroad, and students who took the qualification examinations for medical school and met the minimum score for evaluation, at USU. ORD provided recruitment packets to more than 100 AFHPSP Medical Program Recruiters, during 2003, as part of a joint effort to promote USU and AFHPSP recruitment activities. Additionally, members of the USU community were provided, upon request, with recruitment packets (the USU CD-ROM and the USU and AFHPSP brochures) for distribution at their hometown educational institutions or undergraduate/graduate campuses, professional society meetings, or various geographical sites, while on travel. During the 2003 Christmas and New Year Holiday Season, more than 4,000 packets of recruitment materials were provided to prospective students; by late January 2004, ORD had

received almost 400 replies, which consisted of a combination of e-mails and telephone calls. The ORD staff also designed unique *"Happy Holidays,"* follow-up postcards and mailed them to more than 300 students whose names had been obtained during various visits to campuses and career fairs, during 2003. ORD's small, but effective, staff continuously defied the odds with each major distribution project; for example, during the same time frame, more than 200 similar packets were mailed to *pre-med* advisors and financial aid officers, whose names had been obtained as a result of CAPT Macri's attendance at an Association of American Medical Colleges (AAMC) Regional Meeting.

During the 2003 Academic Year, more than 26 visits were made by ORD staff and AFHPSP recruiters on behalf of USU. Visits included: Cornell University; the State University of New York at Binghamton; Syracuse University; the University of San Diego; Stanford University; Northwestern University; the University of Kansas; the University of Florida; the University of South Florida; Morgan State University; the University of California at Irvine; Arizona State University; the University of Texas Pan American; the University of North Carolina Chapel Hill; the University of South Alabama; Rutgers University; Rollins College; Muhlenburg College; Johns Hopkins University; Howard University; the University of Virginia; Hampton University; Ohio State University; Case Western Reserve University; the Massachusetts Institute of Technology; and, the University of Michigan. During 2003, an estimated 3,500 students were introduced to USU at either their respective campuses, or at the various career fairs. As campus visits continue into 2004, the ORD staff continues to evaluate the cost-effectiveness of responding to the many invitations from the colleges and universities seeking USU representation on their campuses.

Continued Efforts to Enhance the Diverse Educational Environment at USU. ORD continues in its efforts to increase the number of women and disadvantaged applicants in the incoming USU classes by increasing the exposure and name-recognition of USU throughout the United States and among globally deployed active duty or reserve units. *During the 2003-2004 USU Admissions Cycle, there was a 17 percent increase in applications from traditionally underrepresented minority or disadvantaged applicants and a 7 percent increase in the number of overall applicants compared to a 3.4 percent increase across the Nation*. Despite the improvements cited above, fewer students from this group elected to attend USU as their first choice of medical schools. A survey is being conducted by ORD to determine which detractors prevented the underrepresented minority and disadvantaged applicants from selecting USU for matriculation. ORD continues to strive to reach out to all potential applicants by offering pre-application mentoring; ORD's objective is to improve the actual enrollment of such applicants within the next two application cycles. Nationally, the mean percent for the enrollment of traditionally underrepresented minority and disadvantaged students is approximately 11 percent, excluding the three historically black medical schools: Morehouse, Meharry, and Howard Universities. However, the goal of ORD is to reflect the cultural and ethnic diversity within the officer corps of the Armed Forces, which currently stands between 16 and 20 percent, across the three Services.

A comprehensive *National Joint Recruitment Plan* was recently created by **Mr. Peter Stavish, Assistant Dean, USU Admissions and Academic Records,** who can be reached at <*pstavish@usuhs.mil*>; his research revealed that the majority of medical students were supplied by only 400 colleges and universities across the country. ORD's goal for 2004 is to implement the *Five States and District of Columbia Model,* developed by Mr. Stavish, to the greatest extent possible. This initial effort will document feasibility and assess cost-effectiveness before expansion to a larger region.

ORD has also requested that a working group be established to revise and update the current USU recruitment video. Advances in technology indicate that the current video might best be replaced with a DVD; the DVD would contain relevant and current information reference the SOM, the GSN, and the Graduate Education Programs at USU (to include new programs such as: the USU Center for Health Disparities Research and Education, referred to as Project EXPORT; and, the expansion of the Continuing Health Education mission). The roles of USU alumni during the recent conflicts in Iraq and in leadership positions in the Department of Homeland Security would also be showcased in the DVD.

Development of an ORD Strategic Recruitment Plan. At the November 2003 USU Board of Regents Meeting, ORD was officially requested to serve as the Coordinator for all recruitment and outreach activities, with an objective to increase the visibility of the University. Ultimately, ORD will be responsible for the development of products, ideas, or advertisements and the consolidation of such efforts by other groups within the University. This does not imply that various components within the University will discontinue creating and distributing brochures and other related material; ORD will be responsible for coordinating with other entities within the University community to develop strategies for attracting a diverse faculty, staff, and student body. ORD is currently working on articulating a comprehensive plan to accomplish this mission.

USU Post-Baccalaureate Program. The University began its one-year Post-Baccalaureate Program on August 9, 1999, and is in its fifth year of operation. The first two participants graduated in May of 2004. Since the program began, all but one of the 12 student participants have successfully matriculated into the USU School of Medicine. Two students are currently enrolled in the program and both are exceeding the minimum academic standard for full acceptance into the incoming SOM class, in August of 2004.

Through this program, USU identifies applicants to the SOM who may benefit from an introductory year consisting of a portion of the first-year SOM curriculum. Students, who achieve a grade of *B* or better, are re-evaluated for full admission to the SOM. The admissions criteria, to include physical and security standards, are the same for the Post-Baccalaureate Program students as for all other SOM applicants prior to matriculation. The Program was originally developed to enhance the cultural, ethnic, and experiential diversity of the educational environment within the USU SOM by offering the opportunity of a Post-Baccalaureate Program to selected students, who identify themselves as members of cultural or ethnic groups traditionally underrepresented in Medicine, or who are otherwise disadvantaged. Students are administratively registered in the SOM Graduate Education Program and receive an annual stipend similar to a first-year graduate education student. The USU Executive Committee initially approved the design, criteria, funding, and evaluation of the Program; each year, this committee evaluates the Program, before commitments are made, to determine its continuation. As in past years, the USU Office of the General Counsel, the Admissions Office, and the ORD staff collaborated to ensure that the Program objectives were met.

Student Support and Outreach Programs. ORD administratively supports four major student groups: the Asian Pacific American Medical Student Association (APAMSA); the Student National Medical Association (SNMA); Women in Medicine and Science (WIMS); and, the American Medical

Student Association (AMSA). Membership is open to all students; and, all students are encouraged to attend programs sponsored by these organizations. The objectives, programs, activities, and the names of the officers of all of the ORD-sponsored student groups can be viewed on the USU web site at <*www.usuhs.mil*> by clicking on the *Recruitment and Diversity Link*, followed by a second click on *Student Organizations*.

The Asian Pacific American Medical Student Association. In November of 2003, the USU APAMSA Chapter co-hosted the 10th Annual Meeting of APAMSA, in coordination with Chapters from: Johns Hopkins University; Georgetown University; the University of Maryland; and, George Washington University; the conference was held on the campus of the George Washington University Medical Center. The USU Chapter's major contribution was the development of the agenda and the selection and coordination of the approval process for the program speakers. **CAPT Macri, as the USU APAMSA Faculty Advisor,** presented a Surgical Skills Workshop, which was well received. **Lieutenant Colonel John Farley, USU SOM Class of 1995,** presented a lecture on health disparities by highlighting that minority women, who are treated in a bias-free environment, such as the Military Health System, can achieve the same high cure rates for cervical cancer as majority women; whereas, minority women have significantly lower cure rates, in the civilian sector, where a bias-free environment is lacking. Other USU faculty, **RADM Kenneth Moritsugu, M.D., USPHS, Deputy Surgeon General of the United States; Larry W. Laughlin, M.D., Ph.D., Professor and Dean, USU SOM;** and, **COL Ernest Takafuji, USA (Retired),** also presented lectures during the conference. These presentations provided an opportunity to promote the extraordinary expertise of the military-relevant and unique training available at USU, in a national forum.

Student National Medical Association. In April of 2003, the Student National Medical Association (SNMA) National Convention was held in Washington, D.C. The USU SNMA student representatives served as hosts for interested applicants and their mentors. Tours were arranged by the USU Brigade to enhance the introduction of SNMA faculty mentors and prospective applicants to the USU campus, curriculum, and educational environment. The conference was well attended and many attendees took advantage of the opportunity to tour the USU campus. Although the number of traditionally underrepresented minority students at USU remains relatively small, SNMA membership is open to all students in the SOM; and, the group continues to be active in recruitment activities and community outreach. ***The Youth Science Enrichment Program (YSEP)*** is an example of the volunteer programs coordinated by the leadership of the USU SNMA Chapter. YSEP is designed to motivate American youth toward careers in Science and Medicine. The students visited numerous schools this past year; they spoke to elementary, middle, and high school students about the value of education in science and medicine. Plans for 2004 are underway to strengthen SNMA's and ORD's presence among four area high schools located in underserved areas of the Washington Metropolitan Area. USU student volunteers continue to serve as role models for the youth with whom they interact.

Women in Medicine and Science. Women In Medicine and Science (WIMS) continues to be active in planning and organizing quarterly programs within the SOM. Examples of the most popular programs, during 2003, were: *How to Play the Lottery and Win* (referring to the third-year clinical rotations); *Specialty Night*; and, *the Women in Operational Medicine Panel*. **Major Pamela Williams, USAF, MC, USU SOM Department of Family Medicine,** volunteered to serve as the USU Faculty Mentor for this student group.

***American Medical Student Association*.** The National Office of the American Medical Student Association (AMSA) invited USU to revitalize its AMSA Chapter. ORD is currently in the planning and organizing phase of this endeavor; the student leader for this new effort is **ENS Diana Macian, MC, USNR.**

The Helping Hands Project.

For years, USU medical students and USU physicians have found the time to serve in free clinics and to help provide medical care to low-income families in the Washington D.C. Metropolitan Area. The patients are citizens who would not otherwise have access to medical treatment. This community free medical care has occurred through the student-led ***Helping Hands Project*** volunteer program. The Project includes three clinics located in Maryland that have been sponsored by the Mobile Medical Care, Inc. The clinics are located at the KenGar First Baptist Church in Kensington; the Shepherds Table at the First Baptist Church of Silver Spring; and, the Adventist Community Center in Takoma Park. The three clinics provide services such as physical examinations, laboratory analysis, the management of acute and chronic diseases, mental health problems, general health concerns, and referrals for X-ray examinations, and specialty and secondary care.

The mission of the Project has been to ensure that people receive stable family health care, when they would otherwise be unable to afford it. The students have continued to uphold the standards of the mission; *no one is turned away*. As a result of this program, the USU students have become acquainted with available community resources and have learned of the health care needs of a diverse population of patients. USU students take patient histories and present them to physicians; they assist in examinations, and, in general, observe the attending doctors. The patients have been treated for chronic problems such as hypertension, depression, arthritis, and diabetes; the students also observe the care provided to acute-care patients. Depending on the clinic, students have assisted with six to fifteen patients during their three-hour shifts. Student volunteers are exposed to people from different backgrounds who have varying requirements, with limited ability to pay for health care services. The *Helping Hands Project* developed into the current program largely due to the vision of a student organizer, **Raymond J. Legenza, a 1996 USU SOM Graduate**. The Office of Recruitment and Diversity has taken great pride in sponsoring this program; the essential physician support is volunteered by the exceptional faculty of the USU SOM Department of Family Medicine. *Helping Hands* has proven to be a significant USU program; it encourages a meaningful contribution of essential health care by USU faculty and students to their neighboring communities. And, it has provided a tremendous experience for the USU students. A national SNMA initiative, the *Helping Hands Clinic* is one example of the volunteer programs coordinated by the leadership of the USU SNMA Chapter. Due to the turnover in the Family Practice Clinic at USU, the *Helping Hands Clinic Volunteer Program* was less active, during 2003, than in previous years. However, plans are underway to revitalize the program, during 2004.

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The Office of the Brigade Commander. The USU Brigade Commander is recognized as *the senior active duty officer* of the University and reports directly to the President of USU. It is the responsibility of the Brigade Commander to ensure that the uniformed personnel assigned to the University adhere to the appropriate service specific standards set by their parent Services. In addition, the Brigade Commander assures that the interests of the military members assigned to the University are addressed and that they remain competitive for promotion with their service peers. Under the leadership of the Brigade Commander, the uniformed students, faculty, and staff assigned and reporting to the School of Medicine (SOM), the Graduate School of Nursing (GSN), the Graduate Education Programs, or other USU activities, programs or divisions must participate in all activities and events as they would in any other command of the Uniformed Services. Regular formations are held; physical fitness exercises, standards, and testing are adhered to; performance evaluations are completed and rated; and, uniformed personnel are trained in the appropriate uniformed programs and customs.

A Multi-Service Environment. The USU Brigade provides a clear chain-of-command for all uniformed members, thus allowing individuals to rapidly assimilate into their new units and the multi-service environment of USU. The Brigade Command structure includes three subordinate commands that report directly to the Brigade Commander. These subordinate commands include the Commandants from both the SOM and the GSN and the Commander for the Headquarters Company, who is responsible for all assigned enlisted service members. The SOM has three Company Commanders representing the Army, Navy, and the Air Force; they are specifically assigned to USU to provide for military training in officership and leadership. The Navy Company Commander is also responsible for providing this special training to the Public Health Service students. The Company Commanders are mentors for the students and they deploy with them, during each of the University's field training exercises. The USU uniformed faculty and staff also conduct service-unique training, inspections, and military formations. Similar to the Service Academies, each student class also has its own military command leadership structure. The students rotate positions among the class members, which increases individual exposure in the management of specific assignments, duties, and *command* roles. Tactical, senior medical non-commissioned officers are also assigned to each student company to provide mentorship and to assist the Company Commanders with officership training.

Establishment of the Office of the USU Chaplain. In July of 1999, the Navy Surgeon General approved additional billets for a Navy chaplain and an enlisted assistant at the joint environment of USU. The arrival of the chaplain and his assistant as *the first permanently assigned ministry team at USU* filled a void in pastoral care that had existed since the foundation of the University. Following the establishment of the Office of the USU Chaplain, within the Brigade Command, essential counseling and guidance is now available and provided to the USU students and assigned staff.

The mission of the Office of the USU Chaplain is to support and enhance the quality of life of the USU military personnel, to include their families, through spiritual development, as needs are identified and requested. The Office facilitates the free exercise of religion for USU military personnel and their families. Chaplain ministry is needs-based, performed cooperatively, and executed within a pluralistic environment. Faith-specific Student Associations are formed as needs are identified. USU faculty and staff are encouraged to participate in the Student Association of their choice and to support and/or mentor

the students in their spiritual formation in a similar manner as guidance is provided for the development of academic skills. Within regulations, under the University President and the Brigade Commander, and administered by the Office of the Chaplain, the Student Associations are self-governed to meet the specific needs and interests of their constituents. The areas of Ministry are: 1) Pastoral Care (to include prayer, scriptures, insight, listening, encouragement, and support); 2) Pastoral Counseling (provision of individual, marriage, and family counseling on moral, ethical, emotional, spiritual, or faith issues); 3) Pastoral Visitation (ministry of presence at the University, visitation of the hospitalized and confined, and pre-operative prayer or counseling, as requested); 4) Spiritual Direction (integration and guidance provided to an individual for spiritual development); 5) Observance of Religious Rites (religious observances, command functions, memorial services, and social activities); 6) Classes and Seminars (discussions in the areas of value formation, ethical decision-making, bioethics, and faith-related topics); 7) Literature Ministry (provision of devotional, inspirational, and self-help literature); 8) E-Mail (communication of the *thought-for-the-day* and weekly inspirational thoughts); 9) Referral Service (assistance in locating a place of worship, military or civilian, and counseling referrals for requested guidance outside of the Chaplain's expertise); and, 10) Field Exercises (provide worship services, training, and ministry in the field environment for students and staff).

Development of International Relationships. In the Fall of 2000, the USU Brigade Commander initiated a dialogue with the Commander, German Armed Forces Command, United States and Canada, which resulted in the establishment of the German Troop Duty Proficiency Badge Program at USU, making the University the first United States Armed Forces medical organization, in the Military District of Washington, to gain sponsorship from the German Armed Forces Command for this program.

The program provides USU students and faculty with an opportunity to compete for, and attain, the prestigious ***German Troop Duty Proficiency Badge***, which recognizes excellence in both physical fitness and readiness. Besides being a foreign badge, the award is unique, because earning the badge is strictly based on the abilities of each participant and not dependent on the decision of an awards board. Facilities and logistics for the USU program involve strong community relations with agencies and personnel outside of the University, including the Walt Whitman High School at Fort Meade, Maryland, and the National Naval Medical Center, in Bethesda, Maryland.

In order to earn the badge, individuals must achieve minimum standards involving times and distances, while qualifying in the following events: shot put; long jump; sprint (75 meters for women; 100 meters for men); swim (200 meters); marksmanship (9 millimeter pistol); long distance run (2,000 meters for women; 3,000 meters for men); and, a road march (distances range from 20 to 30 kilometers, depending on age, sex, and type of badge - *bronze, silver, or gold* - that the participant is qualifying for). Participants must also be in good standing with the University/Brigade and pass a first-aid course. There are two main road marches each year, followed by an awards ceremony; the *US/GE Day* is hosted by the Military District of Washington, during the Spring; and, the *GE/US Day* is hosted by the German Armed Forces Command, during the Fall.

Upon successful completion of all events, the German Armed Forces Commander presents each individual with a certificate and badge. Participants may then provide their Unit Awards and Decorations Representatives with a copy of their certificates, which are then forwarded to their respective Service

Major Command Personnel Centers for inclusion in their permanent military records. During 2003, nearly 100 USU medical students and faculty members competed for the German Troop Duty Proficiency Badge.

Official Wear of the Badge: Army and Air Force personnel are authorized to wear this badge on their service dress uniforms; Navy personnel are not authorized to wear the badge.

Assurance of Operational Skills. The Brigade's Operations Department provides the planning, coordination, and logistical support for the USU military field training exercises for the first and fourth-year medical students. The development of plans continued, during 2003, for the major exercises at the University: 1) January 12-24, 2003 - ***Operation Bushmaster 01-03***, at Camp Bullis, Texas; 2) June 21 - July 1, 2003 - ***Operation Kirkesner*** at the Marine Corps Base at Quantico, Virginia; 3) September 10-26, 2003 - ***Operation Bushmaster 02-03***, at Camp Bullis, Texas; and, 4) November 5-20, 2003 - ***Operation Bushmaster 03-03***, at Camp Bullis, Texas. Through training such as Operations Kirkesner and Bushmaster, USU encourages each uniformed student to develop and maintain the special skills required to earn a leadership position in military medicine (*see Section II, MILITARY UNIQUE CURRICULUM, for further information*).

During the Summer of 2003, the USU Brigade Commander reported that the second year medical students had participated in the following activities: **Army** - United States Army Airborne School; Mountain Warfare School; clerkships at the Army Surgeon General's Office; Operational Emergency Medical Skills Course; Expert Field Medical Badge; and, United States Army Operational Units (e.g., Fort Bragg, Fort McCoy, Fort Carson, Fort Riley, and Vicenza, Italy); **Navy** - Diving School; Aerospace Medicine (*USS Roosevelt*); United States Navy SEALS; Top Gun; Mountain Warfare Training; Amphibious Warfare School; Neuroanatomy Computing; *USNS Mercy* Hospital Ship; the United States Navy Special Warfare Detachment; Tropical Medicine Course, Brazil; and, Sigonella, Italy; **Air Force** - Operational Emergency Medical Skills; Top Knife; Expert Field Medical Badge; Mountain Warfare School; and, United States Air Force Hospitals and Research. From qualifying for the Expert Field Medical Badge, to conducting undersea medical research with the United States Navy SEALS, USU students are developing and maintaining the special skills required to assume leadership positions in uniformed medicine. Additionally, the diverse and exciting training USU students complete during their summer activities helps the University to accomplish the *First Objective of Goal 1, **EDUCATION**, from the USU 2003-2004 Strategic Plan: USU will provide outstanding education to our students, focused on Military Readiness and Homeland Defense*; and, the *First Objective of Goal 2, **MILITARY SERVICE:** USU will produce skilled professionals with special orientation to those aspects of Medicine, Science, and Nursing to support the military and Federal health care systems*.

In July of 2003, the Department of Military and Emergency Medicine (MEM) studied Fort Indiantown Gap (FIG), Pennsylvania, as a potential exercise site. The proximity, terrain and equipment resources of FIG made it a very promising site for *Operation Kerkesner* and, possibly, *Operation Bushmaster*. The USU President and the Dean of the School of Medicine traveled to FIG, in September, to meet with the Adjutant General of the Pennsylvania National Guard to ensure that the USU training requirements could be adequately supported, at FIG. Following a favorable determination, the USU President authorized MEM to plan the execution of the June 2004 Kerkesner Exercise at FIG. In December of 2003, the Brigade Commander met with MEM and the Commandant of the School of

Medicine to develop the execution of *Operation Kerkesner* at the new site, to include the incorporation of a new Leadership Development Exercise. The new plan was designed to test FIG's ability to support a combined Kerkesner/Bushmaster Exercise. The Dean of the School of Medicine approved moving *Operation Kerkesner* to FIG and instructed MEM and the USU Brigade to develop a potential plan for a combined Kerkesner/Bushmaster Exercise, in Fiscal Year 2005.

The Brigade Headquarters Company is the enlisted Brigade Command support element for USU and is commanded by the only Marine assigned to the University. In addition to the performance of their military occupation specialties, during normal duty hours, the enlisted members of the Headquarters Company ensure that equipment, supplies, transportation, and personnel are positioned to accomplish all major field exercises, each year. The Brigade is responsible for ensuring that the enlisted personnel at USU are proficient in their operational support skills that enable them to remain competitive for promotion.

Orientation Responsibilities. Another responsibility of the Brigade, during the first quarter of each Academic Year, includes the in-processing requirements for all uniformed students, whether they are matriculating into the SOM, GSN, or the Graduate Education Programs in the SOM. In the case of the 167 first-year medical students for Academic Year 2003, Brigade letters were issued to the incoming students to include a detailed calendar of events outlining their in-processing week. This increased level of detail facilitates the orientation process and eliminates students' concerns over appropriate uniform, classroom, and Brigade requirements. The military aspects of the University are stressed during the first week, as well as the students' responsibilities in their primary role as military officers.

Recruitment Efforts for Underrepresented Communities. The Brigade continued to reach out to the ROTC and underrepresented communities, during 2003. The Brigade's recruitment efforts, during 2003, included presentations on the value of a USU medical education at the following universities: the University of Arkansas at Little Rock; the University of Westminster, Missouri; the University of Mississippi; the University of Missouri, at Columbia; and, Lincoln University, in Jefferson City, Missouri. The membership of **Charles S. Serio, Colonel, MS, USA, USU Brigade Commander,** on the West Point Medical Advisory Selection Committee, continues to give USU exposure to some of the top military academy students in the country.

USU Color Guard. Formal ceremonies have continued to be an important element of military tradition since the earliest armies and navies entered combat. Whether at a retirement, change-of-command, or a unit stand-up, the military goes to great lengths to showcase its command, its people, and its pride in the Nation. Color guards have long been an important part of these ceremonies, and USU is carrying on that tradition, forming its own color guard in 1997. The USU Color Guard is comprised of enlisted members (E-5 and below) from the Army, Navy, and the Air Force. The first major performance of the USU Color Guard occurred at the 1997 USU Graduation; the colors were also presented during the USU Brigade Change-of-Command Ceremony, in 1998, and the Headquarters Company Change-of-Command Ceremony, in August of 2001. This past year, the USU Color Guard has had the opportunity to represent the University and the military at the opening of major sporting events in the local area. During the USU graduations, from 1998 through 2003, the USU Color Guard has brought the colors on stage

during the commencement ceremonies, which are generally held at the National Society of Daughters of the American Revolution Constitution Hall, in Washington, D.C. Also, during 2003, the USU Color Guard performed at the annual *USU Dining-Out Ceremony*, as well as at the National Association of Military Surgeons of the United States (AMSUS) Convention, in San Antonio, Texas.

Officer Indoctrination Training of USU Matriculants. Formal studies were initiated, in 2003, to assess the value of conducting a *Basic Officer Indoctrination Course* on the USU campus for all Army, Navy, and Air Force matriculants to the USU SOM. At the present time, the Surgeons General spend approximately $500,000 per year to transport and house USU non-prior-service Navy and Air Force matriculants and all of the USU Army matriculants so that they can attend their Service-specific officer indoctrination courses, prior to their arrival at USU. Because of the time constraints that occur due to the timing of college graduations, the notice of final acceptance by USU Admissions, and the receipt of official military orders, some of the USU matriculants have been unable to attend these courses prior to their arrival at USU. Due to the USU requirements for military training during the Summer following the first year of medical school, it is almost impossible for those students, who miss their indoctrination courses, to make them up without impacting on their medical education requirements. The Brigade currently proposes to investigate the efficiency of having all USU matriculants attend a *USU TriService Indoctrination Course* to be held at USU, during July and August, prior to the Brigade orientation and class initiation activities. Topics, which are applicable to all Services, would be held in a large lecture room, while service-specific topic sessions would be held in the smaller USU classrooms. Faculty from USU could be augmented with temporarily assigned instructors, as required by each of the present course coordinators. Incoming students would no longer be required to travel elsewhere, before their arrival at USU, which would accommodate the location of housing for themselves and their families, prior to course commencement. Although cost-savings would be partially offset by the temporary travel and housing for the visiting faculty, the overall savings would still be significant. In addition, each in-coming class would have the opportunity to develop a strong sense of *esprit de corps*, prior to the beginning of classes. This effort would fall under the *USU Strategic Goals 1 and 2,* ***EDUCATION*** *and* ***MILITARY SERVICE***, since USU would be providing an additional level of military educational training specifically for the USU SOM students. *USU Strategic Goal 5,* ***STEWARDSHIP:*** *To protect and enhance the human and physical resources of the University, optimize productivity, promote a sense of family and community, while emphasizing flexibility in response to changing world conditions*, supports the proposed USU effort to coordinate with each of the Services to generate cost-effectiveness for the administrative and financial aspects of the current process for USU SOM student indoctrination.

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***Goal 5, STEWARDSHIP*, of the 2003 USU Strategic Plan includes a requirement for the University to establish an enhanced sense of intramural community. The Combined Federal Campaign is one event, which crosses all boundaries within the University and unifies the entire USU community, through a common goal of sharing with those who are in need, either in our own community, or on a global scale.**

USU Exceeds Established Goals for the Combined Federal Campaign. From 1997 through 2003, the University has reached its Combined Federal Campaign (CFC) goal, due to the tremendous efforts and coordination of the Office of the USU Brigade Commander. Under the leadership of the USU Chair, Vice Chair, and Campaign Managers, the total contributions reached over $176,672. Approximately 72 percent of the USU staff, students, and faculty contributed to the Year 2003 Campaign for worthy community, national, and world charities. ***The Year 2003 marks the seventh consecutive year in which the University has exceeded its goal.***

USU also earned the ***2003 CFC Summit Award*** for attaining 106 percent of its goal of $167,000. In doing so, USU had a total of 66 *Eagle* donors (51 single *Eagles* with contributions representing at least one percent of the employee's salary; and, 15 double *Eagles* with contributions representing at least two percent of the employee's salary). And, for the sixth time, the USU Audio Visual Center won the award for the best designed poster for the Department of Defense, during the 2003 CFC Campaign. The winning entry was created by **Ms. Rachel Oakes**.

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UNIVERSITY HONORARY DEGREES, AWARDS AND RECOGNITION

The University will promote a sense of family, community and outreach.

- Goal 5, STEWARDSHIP, USU 2003 Strategic Plan.

The University Has Granted a Total of 34 Honorary Degrees Since its Establishment. Since the first Honorary Degree that was granted in 1991, ***through April of 2004***, a total of 34 recipients have been selected. The Honorary Degree recognizes individuals who have demonstrated outstanding support for the Military Health System and/or the Uniformed Services University of the Health Sciences.

Honorary Degree Recipients:

1991 **Jay Sanford, M.D., Third President of the University and first Dean of the School of Medicine,** recognized as a major participant in the establishment and early leadership of the University;

1992 **Harry C. Holloway, M.D., Professor, USU Department of Psychiatry, and Deputy Dean from 1990 through June 1992,** recognized for unwavering support during a transitional period;

1993 **The Honorable Daniel K. Inouye, United States Senator from Hawaii, Senate Appropriations Committee,** recognized for continuous leadership and support for Military Medicine and the University as one of the original members of the Congress who supported the establishment of the University;

1994 **Mr. Zachary Fisher, Champion of the Armed Forces,** recognized for his founding of the Intrepid Museum, the Fisher House Foundation, the Fisher Armed Services Foundation, and his tremendous support for both Military Medicine and the University;

The Honorable David Packard, Former Deputy Secretary of Defense, first Chairman of the USU Board of Regents, and Acting President of USU from 1976 to 1981, recognized for his oversight during the original construction of the USU campus and his constant support for Military Medicine and the University from its establishment in 1972, until his death in 1996;

1995 **The Honorable Sam Nixon, M.D., Former Chairman of the USU Board of Regents and Founder of the USU Tradition of the Mace** for the University Commencement Ceremonies, recognized for his dedication to Military Medicine and the superb leadership he provided to the University;

Frank Reynolds, M.D., Internationally recognized throughout the practice of civilian medicine and for his continuous support and interest in both Military Medicine and the University; he was also the commencement speaker during the 1995 Commencement Ceremonies;

The Honorable Strom Thurmond, United States Senator from South Carolina, Chairman, Senate Armed Services Committee, recognized for continuous leadership and support for Military Medicine and the University and as one of the original members of the Congress who supported the establishment of the University;

1996 **Michael E. DeBakey, M.D., Renowned Surgeon, who has been recognized by numerous Presidents of the United States** and leaders of many nations, for his knowledge of medicine and his unwavering support for Military Medicine and the University;

The Honorable Melvin R. Laird, Former Secretary of Defense and continuous supporter of Military Medicine and the University, recognized for his provision of essential guidance and support since the establishment of USU;

Francis D. Moore, M.D., Internationally recognized as a distinguished Surgeon and supporter of Military Medicine and for his consistent support to the educational programs within the University;

1997 **Donald L. Custis, M.D., Vice Admiral (Retired), Former Surgeon General of the United States Navy,** recognized for his career of dedicated service to Military Medicine and consistent support for the University;

The Honorable C. Everett Koop, M.D., Former Surgeon General of the United States and Member of the USU Board of Regents, recognized for his consistent support for Uniformed Medicine and the University;

The Honorable Constance Morella, Member of the United States House of Representatives from the State of Maryland, recognized for her outstanding dedication to quality health care, medical research and technology, and for her unwavering support for the University;

President Ronald W. Reagan, President of the United States from 1980 through 1988, recognized for his dedication to the welfare of the Armed Forces, Military Medicine, and the University;

1998 **General Charles Krulak, Commandant, United States Marine Corps,** recognized for his outstanding support for Military Medicine and for the welfare of the University; he presented the commencement address during the 1998 Commencement Ceremonies;

Joshua Lederberg, Ph.D., Nobel Laureate and Internationally Recognized as a Leader in Medicine and for his participation in, and support of, University activities and programs;

V. M. Rexroad, Brigadier General, United States Air Force, recognized as one of the original supporters of the University and for his dedication to Military Medicine and long-term dedication to the welfare of the University from its establishment, until his death, in 2002;

David C. Sabiston, Jr. M.D., Internationally Recognized throughout the Civilian Practice of Medicine for his dedication and support of Military Medicine in general and for his unwavering support for the University;

1999 **Oliver H. Beahrs, M.D., Professor of Surgery, Emeritus, Mayo Medical School, Past President of the American College of Surgeons,** recognized for his continuous support for Military Medicine in general and for his on-going and dedicated support for the University;

Sheila Burke, Executive Dean, Lecturer in Public Policy, John F. Kennedy School of Government, Harvard University, Former Chief of Staff, Office of the Republican Leader, United States Senate, from 1986 to 1996, recognized for her dedication to Military Medicine and the University;

The Honorable Paul S. Sarbanes, United States Senator from Maryland, recognized for his unwavering support of, and dedication to, essential legislation for both the Military Health System and the University;

2000 **The Honorable William S. Cohen, Secretary of Defense,** recognized for his outstanding support and dedication to Military Medicine and to the welfare of the University;

2001 **The Honorable Robert J. Dole, Former United States Senator from Kansas and Senate Majority Leader,** recognized for his tremendous history of service to his Nation during War and Peace and for his commitment to the health care of the Armed Forces and to the University;

Val G. Hemming, M.D., Professor and Dean Emeritus, USU School of Medicine, recognized for his dedicated and outstanding service to the Nation, which began in 1965, through his retirement, in 2002; his sincere and successful leadership resulted in tremendous acclaim for the University from the Department of Defense and the United States Congress;

The Honorable Theodore F. Stevens, United States Senator from Alaska and Chairman of the Senate Appropriations Committee, recognized for his great dedication to the Nation and the health care of the Armed Forces and the continuation of the University;

2002 **Faye Glenn Abdellah, Ed.D., Sc.D., RN, FAAN, Professor and Dean Emerita, USU Graduate School of Nursing,** recognized as a nurse, educator, researcher, an internationally acclaimed leader, and the Founding Dean of the newly established and accredited Graduate School of Nursing;

F. William Blaisdell, M.D., Professor of Surgery, UCD, and Chief of Surgical Services, Sacramento, VA Medical Center, recognized as a physician, researcher, and scholar, for a lifetime of service to the cause of medicine, and as a friend of military medicine and USU;

The Honorable Lonnie R. Bristow, M.D., Past President of the American Medical Association and Chairman of the USU Board of Regents, recognized as a driving force in the American Medical Association and for the initiation of a ground-breaking project in performance measures to determine the success of USU students and graduates;

Anthony R. Curreri, M.D., First President of USU, Recipient of the Department of Defense (DoD) Distinguished Public Service Award, in 1977, recognized, posthumously, for his leadership and vision, during the establishment of the University. From 1974 through 1976, he led the development and implementation of the strategies, goals and organizational structure, which ultimately ensured that USU would meet its mission to provide continuity and leadership for the Military Health System. Doctor Curreri orchestrated collaborative efforts with the military departments, medical associations, and civilian universities during the creation of USU's first academic programs;

2003 **The Honorable Richard H. Carmona, M.D., M.P.H., F.A.C.S., Vice Admiral, United States Public Health Service, Assistant Secretary for Health (Acting), Health and Human Services, Surgeon General of the United States,** recognized for his on-going, Nation-wide leadership in the areas of medical preparedness and Homeland Defense and for his continued support for the University faculty and students (a description follows);

John A. Mannick, M.D., Past-President of the Societies for Vascular Surgery and Surgical Chairmen, the American Surgical Association, the North American Chapter of the International Society for Cardiovascular Surgery, the New England Society for Vascular Surgery, and the USU Surgical Associates, recognized for serving over 20 years on the Visiting Board to the USU SOM Department of Surgery and for his untiring support for the University faculty, staff and students (a description follows);

Major Alfred V. Rascon, MS, USA, Medal of Honor Recipient, recognized for his courageous service as an Army medic during combat in the Republic of Vietnam where he refused treatment for his wounds, until his comrades were safe, and for serving as a role model for the graduates of the University (a description follows); and,

Martin E. Silverstein, M.D., Clinical Professor, Family and Community Medicine (International Medicine), Georgetown University School of Medicine; Member, Executive Committee, World Association for Emergency and Disaster Medicine; Senior Fellow, American College of Gastroenterology; Clinical Professor of Surgery, USU SOM, was recognized as a physician, innovator, researcher, scholar and friend of the University. For over 20 years, he provided invaluable mentorship and support to the faculty, staff and students of the University (a description follows).

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Four Honorary Degrees Were Conferred During 2003.

The Honorable Richard H. Carmona, M.D., M.P.H., F.A.C.S., Vice Admiral, United States Public Health Service, Assistant Secretary for Health (Acting), Department of Health and Human Services, Surgeon General of the United States, received the Doctor of Military Medicine and Surgery, *Honoris CAUSA*, and provided the Commencement Address, during the 2003 USU Graduation Ceremonies. Doctor Carmona was sworn in as the 17th Surgeon General of the United States Public Health Service, on August 5, 2002; he assumed the role of Acting Assistant Secretary for Health, on February 5, 2003. Born and raised in New York City, Doctor Carmona dropped out of high school and enlisted in the United States Army, in 1967. While enlisted, he received his Army General Equivalency Diploma, joined the Army's Special Forces, and ultimately became a combat-decorated Vietnam veteran. After leaving active duty, Doctor Carmona attended the Bronx Community College, of the City University of New York, where he earned his Associate of Arts Degree. He later attended and graduated from the University of California, San Francisco, with a Bachelor of Science Degree (1977) and a Medical Degree (1979). At the University of California Medical School, Doctor Carmona was awarded the prestigious *gold headed cane* as the top graduate; he also earned a Master of Public Health from the University of Arizona (1998). Doctor Carmona has worked in various positions in the medical field, including paramedic, registered nurse, and physician. He completed a Surgical Residency at the University of California, San Francisco, and a National Institutes of Health-sponsored Fellowship in Trauma, Burns, and Critical Care. Doctor Carmona is a Fellow of the American College of Surgeons; and, he is also certified in correctional health care and in quality assurance. Prior to being named Surgeon General, Doctor Carmona was the Chairman of the State of Arizona Southern Regional Emergency Medical System, a Professor of Surgery, Public Health and Family and Community Medicine at the University of Arizona, and Surgeon and Deputy Sheriff for the Pima County Sheriff's Department.

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John A. Mannick, M.D., Past-President of the Societies for Vascular Surgery and Surgical Chairmen, the American Surgical Association, the North American Chapter of the International Society for Cardiovascular Surgery, the New England Society for Vascular Surgery, and the USU Surgical Associates, received the Doctor of Military Medicine and Surgery, *Honoris Causa*, during the USU 2003 Commencement Ceremonies. Doctor Mannick was born in Deadwood, South Dakota, during

the heart of the depression. He attended Harvard College and the Harvard Medical School, followed by an internship in Surgery at the Massachusetts General Hospital. He served two years in the United States Air Force, before returning to residency training at the Malcolm Grow Hospital, where he developed an interest in the new field of organ transplantation. Before completing the surgical training program in 1960, he spent a year as an National Institutes of Health Research Fellow, working with E. Donnall Thomas in Cooperstown, New York (who later won the Nobel Prize in Medicine for transplantation immunology). His first faculty appointment was at the Medical College of Virginia, in Richmond. He quickly established a wealth of prolific and high impact contributions to scientific and clinical literature, authoring 19 papers in his first three years (including publications in Science, Nature, and the Journal of Clinical Investigations); and, he made the first of his 26 contributions to the Surgical Forum. By 1973, he was the Chair of Surgery at Boston University. Doctor Mannick was appointed the Moseley Professor of Surgery at the Harvard Medical School and the Surgeon-in-Chief at Brigham & Women's Hospital, in 1976. During his 18-year tenure as Chairman at Brigham, he brought his department into the forefront of American surgery by directing enormous growth, both in high quality surgical science and clinical activity, and by developing the Surgical Residency Program into one of the finest in the country. Doctor Mannick has directed a basic research laboratory with continuous NIH funding for over 40 years; and, he has authored over 340 publications. Since the 1980's, the focus of his laboratory research has been the immune consequences of injury. During the past 20 years, Doctor Mannick has served the Nation as a physician, scholar, researcher, innovator and valuable friend and mentor for the students and faculty of the USU SOM.

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Major Alfred V. Rascon, MS, USA, Medal of Honor Recipient, received the Doctor of Medical Jurisprudence, *Honoris Causa*, at the USU 2003 Commencement. Major Rascon distinguished himself during combat in the Republic of Vietnam. On March 16, 1966, then Specialist Fourth Class Rascon was assigned, as a medic, to the United States Army's Reconnaissance Platoon, Headquarters Company, 1st Battalion (Airborne) 503rd Infantry, 173rd Airborne Brigade. During an attack from a numerically superior force, he braved intense fire to aid fallen comrades. He was critically wounded several times because he shielded his patient with his own body. Despite his wounds, he remained on the battlefield and continued to render aid and retrieve abandoned weapons. Only when all of his comrades were safe, did he consent to receiving care for himself. For conspicuous gallantry and intrepidity at the risk of his life above and beyond the call of duty, Major Rascon was awarded the Medal of Honor, on February 8, 2000. Major Rascon continued to serve his Nation in a variety of positions in the United States Army, the Department of Justice, the Drug Enforcement Agency, and the Immigration and Naturalization Service. In 2002, Major Rascon retired from the Civil Service as the Inspector General and then Director of the United States Selective Service. In February of 2003, Major Rascon was recalled to active duty to work in the Office of the Surgeon General of the United States Army. Major Rascon's continued commitment to the Nation and his longevity of service, coupled with his extraordinary achievements as a medic in Vietnam, make him an outstanding role model for all military medical personnel. His life and his heroic actions provide an outstanding example for the students of USU.

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Martin E. Silverstein, M.D., Clinical Professor, Family and Community Medicine (International Medicine), Georgetown University School of Medicine; Member, Executive Committee, World Association for Emergency and Disaster Medicine; Senior Fellow, American College of Gastroenterology; Clinical Professor of Surgery, USU SOM, received the Doctor of Military Medicine and Surgery, *Honoris Causa*, during the Annual USU Surgical Associates Day, held in August of 2003. Doctor Silverstein, a physician, innovator, researcher, scholar, and friend of the University, has spent a lifetime in service to the cause of medicine and the plight of those in need of care. Doctor Silverstein's major fields of interest are in Shock Trauma and International Disaster and Emergency Management. In addition to his current positions listed above, Doctor Silverstein's vast experience has proven to be a virtual *gold mine* for those with whom he consults. A selected few of his previous appointments include: Senior Fellow in Science and Technology, Center for Strategic and International Studies, Georgetown University; Research Professor of Surgery (Surgical Biology), University of Arizona College of Medicine; and, Director of Quality Assurance, University Hospital, University of Arizona College of Medicine. Today, Doctor Silverstein is conducting research in eight areas, of which, six are listed: Prediction and Management of Disaster by Technological Means; Use of Communication Networks in Distribution and Management of Injured Patients in Mass Casualty Situations; Strategic and Tactical Approaches to the War-Injured and the Disaster-Injured in Mass Casualty Situations; Medical Science and Health as an Instrument for Foreign Policy; Low-Intensity Warfare: A New Environment for Medical Care; and, Use of LASERS and MASERs in the Non-Invasive Treatment of InterOrgan Disease. His expanded publications justify that he has met his lifetime goal: *to provide a body of knowledge that will be useful for future scholars and disaster managers and serve as a basis for action*. Doctor Silverstein's on-going accomplishments serve as a model for the qualities USU seeks to instill in its alumni, as they serve in the Military Health System as physicians, advanced practice nurses, or scientists. Doctor Silverstein has served on the faculty of the USU SOM Department of Surgery for over 20 years; and, during that time, he has provided invaluable consultation and expertise to the surgical academic activities at the University.

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The University Medal.

Background. The University Medal is one of the University's highest honors. It was created in 1999, to pay tribute to deserving alumni, staff, and faculty members, friends and supporters of the University, its schools, programs, and mission. The recipients are recognized for professional or academic success or public service. Receipt of the University Medal is by endorsement and recommendation of the USU Committee for Names and Honors, submitted through the USU President, with the approval of the USU Board of Regents.

The University Medal, molded from silver, displays the University Seal on the front side; the medal's number, recipient's name, and the award date are engraved on the reverse side. The year 2003 marked the fourth annual presentations of the University Medal. As of April 2004, a total of 19 individuals have received the University Medal.

University Medal Recipients:

1999 **Lieutenant General Ronald Blanck, Surgeon General of the Army,** received the first University Medal at the November 1, 1999 Meeting of the Board of Regents. As Surgeon General, he served as a member and Chair of the USU Executive Committee; he was also the Assistant Dean of Student Affairs at USU from 1976 through 1979;

2000 **David O. Cooke, Director of Administration and Management, Office of the Secretary of Defense,** was awarded the University Medal during the USU Commencement Ceremonies on May 20, 2000, in recognition of his long-term service in the Office of the Secretary of Defense (OSD). From 1957 until his death in 2002, Mr. Cooke provided continuous support and administrative guidance for Military Medicine and the University;

Rear Admiral Michael L. Cowan, MC, USN, Chief of Staff for the Assistant Secretary of Defense for Health Affairs (and later Surgeon General of the Navy), received the University Medal in recognition of thirty years of dedicated service in support of Military Medicine and the University. Admiral Cowan received the University Medal during the USU Commencement Ceremonies on May 20, 2000, following his presentation of the Commencement Address;

Jeffrey R. Swope, Director, USU Audio Visual Center, upon his retirement from public service, was recognized for his leadership in the establishment of the University Audio Visual Center, during 1977, and for his 23 years of continuous dedication and unwavering support to the USU community. The University Medal was presented on May 20, 2000, during the USU Commencement Ceremonies;

2001 **Lieutenant Colonel Yvonne Andejeski, MC, USA, USU SOM Class of 1983,** completed a residency in radiation oncology; she was board-certified, in 1987, and was active in patient care and research. She served as the Acting Chief of Radiation Oncology at the National Naval Medical Center and as the Chief of Radiation Oncology at the Walter Reed Army Medical Center, as well as the Radiation Oncology Consultant to the Surgeon General of the Army. In addition to serving as the Program Manager for a congressionally-directed $240 million breast cancer research program, in 1998, she co-designed and co-managed the development of the DoD Breast Cancer Treatment Guidelines using a TriService, multi-specialty panel of oncologic, surgical, and primary care and psycho-social clinicians. Following her own diagnosis of breast cancer in 1994, she selflessly continued her work through the Spring of 2001, when she retired from the Army and assumed a position at the National Cancer Institute. On March 31, 2001, during a retirement party in Doctor Andejeski's honor, Doctor Lee Poth presented the University Medal, on behalf of the University, in recognition of LTC Andejeski's significant contributions to research, medicine, the military, and the University. Doctor Andejeski died in October of 2001;

Gerald W. Fischer, M.D., Colonel, MC, USA (Retired), received his commission in the United States Army in 1971, and began his pediatric training at the Madigan Army Medical Center, followed by an Infectious Disease Fellowship at the Tripler Army Medical Center. After arriving at USU in 1977, he earned the faculty rank of professor, within four years. During his twenty-year tenure in the USU Department of Pediatrics, he held numerous positions of importance. He is a superb clinician who has trained numerous military physicians as fellows in his specialty. His scientific career has been quite successful, earning both national and international recognition; he has also founded his own biotechnology company, Biosynexus. The University Medal was presented on May 19, 2001, during the 2001 Commencement Ceremonies;

Connie Mariano, Rear Admiral, MC, USN, USU SOM Class of 1981, the first USU SOM Graduate to be promoted to 0-7, was the Commencement Speaker during the 2001 USU Graduation Ceremonies. During June of 1992, RADM Mariano became the first military woman to be named White House Physician; in February of 1994, she was promoted to Director of the White House Medical Unit and Senior White House Physician. **Doctor Mariano was promoted to Rear Admiral (lower half) on July 1, 2000, making her the first Filipino American to become an admiral in the history of the United States Navy.** The University Medal was awarded following RADM Mariano's presentation of the USU Commencement Address on May 19, 2001;

Michael N. Sheridan, Ph.D., USU SOM Associate Dean for Graduate Education, was recognized for his tremendous service to the University since 1980. Following his planned retirement during 2002, the University's presentation of this award reflected the tremendous respect and gratitude held by all for Dr. Sheridan's dedicated service and accomplishments during his more than twenty years of outstanding service to the University. The University Medal was presented during the USU Commencement Ceremonies on May 19, 2001;

Craig Llewellyn, M.D., Professor and Chair, Department of Military and Emergency Medicine, received the University Medal on August 23, 2001, during the welcoming ceremonies for the new students. The award recognized the superb dedication of Doctor Llewellyn who served as the Department Chair of Military and Emergency Medicine for 14 years (1987 through 2001). Doctor Llewellyn first joined USU in 1982, when he was selected to serve as the Commandant of Students from 1982 through 1987. Doctor Llewellyn has served as a foundation for the University in its continuous efforts to effectively respond to the special needs of military medicine. He remains at USU as a tenured professor and also as the Director of the Center for Disaster and Humanitarian Assistance Medicine (CDHAM);

Norman M. Rich, M.D., Professor and Chair, Department of Surgery, was awarded the University Medal on August 23, 2001, during the 16th Annual Surgery for Trauma Day. Since the very inception of the University, Doctor Rich

has continuously provided support and encouragement to the faculty, students, and graduates of the School of Medicine. On both the national and international scenes, Doctor Rich has contributed to a positive awareness of the University through his international efforts and memberships in elite organizations. He has been responsible for on-going visits by prestigious organizations to USU. Two examples of such visits include the Society of University Surgeons (this premier organization for young academic surgeons has held two meetings at USU, whereas the majority of United States medical schools have never been visited) and, the International Surgical Group composed of Professors from leading Canadian, British, Scandinavian, and United States Schools of Medicine;

2002 **Val G. Hemming, M.D., Professor and Dean Emeritus, USU School of Medicine,** was awarded the University Medal on April 25, 2002, by the University President during Dean Hemming's retirement ceremony. Dean Hemming first came to USU in 1980 and served in the Department of Pediatrics where he was appointed as the Department Chair, in 1987. In 1995, he served as the Interim Dean until his appointment as Dean, in May of 1996. Under his leadership, the curriculum of the SOM was thoroughly reviewed and enhanced to better meet the special needs of the Uniformed Services. In all matters, Dean Hemming efficiently kept the welfare of the students, faculty and staff of the SOM as a driving force during his successful leadership;

Scott R. Lillibridge, M.D., CAPT, USPHS, USU Class of 1981, Leader of the Health and Human Services Coordinated Bioterrorism Initiative in July 2001, was awarded the University Medal on May 18, 2002, at the USU Commencement Ceremonies. CAPT Lillibridge was also the Guest Speaker at the 2002 USU Commencement. At the time of the graduation ceremony, CAPT Lillibridge served as the Special Assistant for Bioterrorism for the Secretary of Health and Human Services (HHS) and directed anti-terrorism efforts across HHS. CAPT Lillibridge also served as the Director of the Bioterrorism Preparedness and Response Program for the Centers for Disease Control and Prevention from 1998 through 2001. He joined the CDC in 1990, and in 1995, he led the United States Medical Delegation to Japan after the sarin gas attack in the Tokyo subway. Also during that year, Dr. Lillibridge was the lead physician for the United States Public Health Service response following the Oklahoma City bombing. He has worked in 14 nations on epidemiology and other public health issues; has had three books in press; and, authored or co-authored 25 publications on bioterrorism and various other public health issues;

Chester J. Pletzke, A.M.L.S., Former Director of the USU Learning Resource Center, received the University Medal at the USU Commencement Ceremonies on May 18, 2002. Mr. Pletzke provided exceptional service to USU for 24 years as the Director of the USU Learning Resource Center (LRC). His visionary planning, advocacy, entrepreneurship, marketing skills, and great creativity resulted in the LRC becoming one of the outstanding medical university libraries and information centers in the United States. He forged partnerships with the

National Library of Medicine, medical publishers, other medical libraries, information technology providers, and various government libraries to ensure that the LRC retained its national leadership. Every accrediting entity since the establishment of the LRC has recognized his superb leadership and the extraordinary support provided by the LRC to the students, faculty and staff at USU;

Dale C. Smith, Ph.D., Professor and Chairman, Department of Medical History, received the University Medal at the USU Commencement Ceremonies on May 18, 2002. Doctor Smith has already provided over twenty years of exemplary service to the University as a superlative teacher; mentor and critic; scholar of the history of medicine, military medicine and science; and, as a department administrator. His contributions in redefining scholarship and revising the University's essential policies for faculty appointment, promotion, and tenure have been critical. He has assisted with the development of new graduate programs in medical history, military applied physiology, and laboratory and animal medicine. In his capacity as an invited lecturer on medical and military history throughout the Nation and in many parts of the World, he has enhanced the recognition of USU, its mission, and the proud heritage of military medicine in the United States;

Faye Glenn Abdellah, Ed.D., Sc.D., RN, FAAN, Professor and Dean Emerita, USU Graduate School of Nursing, received the University Medal on May 30, 2002, from the University President, during her retirement ceremony. Upon her arrival at USU, in 1993, Doctor Abdellah was faced with urgent requirements to establish curricula, select a faculty, and gain approval from accrediting entities for the establishment of the USU Graduate School of Nursing (GSN). She accomplished all requirements with extraordinary success. As of April 2003, 183 advanced practice nurse graduates of the GSN had received graduate degrees in their specialties and were serving the Nation in the Uniformed Services. The Nursing Chiefs of the Armed Forces extolled the success of the GSN during 2001-2002, when they met with the two accrediting organizations. Under the leadership of Dean Abdellah, the GSN met its mission and succeeded far beyond the established goals of the United States Congress and the Military Health System;

2003 **John Sarvey, Ph.D., USU SOM Professor of Pharmacology and Neuroscience,** was awarded the University Medal on May 28, 2003. Doctor Sarvey was born in North Tonawanda, New York, and received his undergraduate training at Williams College, Massachusetts, majoring in chemistry. He then joined the Army Special Forces as a medic, where he rose to the rank of Sergeant First Class, serving for one year on active duty and a further six years in the National Guard. While in the National Guard, he completed a Ph.D. Degree in Pharmacology at the State University of New York at Buffalo. Doctor Sarvey joined the USU SOM Department of Pharmacology in 1979; at the time of his death on August 20, 2003, Doctor Sarvey's research had attracted national and

international attention. He used electro-physiological techniques to elucidate mechanisms underlying the phenomenon of long-term potentiation (LTP) in hippocampus and other brain regions. His laboratory was the first to show that LTP was prevented by inhibitors of protein synthesis and to identify roles for specific neurotransmitters. In all of his studies, Doctor Sarvey was aided by the work of numerous gifted graduate education students and post-doctoral fellows who joined the Sarvey laboratory due to his extraordinary enthusiasm for his research projects, his ability to transmit that enthusiasm to others, and his skill in making the laborious work of obtaining reliable electrophysiological recordings seem like great fun. It is greatly to his credit that many of his students and trainees have gone on to develop distinguished research careers. He was also an excellent teacher of medical students, receiving on-going student recognition for his outstanding teaching skills. Typical of his dedication to the SOM, after his condition was diagnosed, he continued as the Course Director for the Medical Pharmacology Course. Doctor Sarvey's dedication, enthusiastic teaching and scientific contributions will be long remembered. He is greatly missed by his USU family;

John W. Lowe, Colonel, Medical Service Corps, United States Army (Retired), President and Chief Executive Officer of the Henry M. Jackson Foundation for the Advancement of Military Medicine, received the University Medal on May 9, 2003. Mr. Lowe joined the Henry M. Jackson Foundation (HJF) in 1988, after serving more than 30 years in the Medical Service Corps of the United States Army. His last active duty assignment was devoted to supervising the Directing Headquarters of the United States Army Europe, 7th Medical Command, which provided health care for over 500,000 United States military health beneficiaries throughout Europe. For nearly ten years, Mr. Lowe has served as the HJF Program Director for a multi-year, multi-million dollar HIV research program conducted by the Department of Defense and the Foundation. And, Mr. Lowe has served as the President and CEO of the Henry M Jackson Foundation, since 1990. During the past 14 years, Mr. Lowe has ensured that the HJF continues to provide extensive scientific and project management services, of the highest quality, in support of military medical research and education at USU. Mr. Lowe has been instrumental in ensuring that the partnership between the Foundation and USU has grown and flourished; for example, during 2003, the HJF sponsored 43 research bridge grants and, during the past few years, the HJF has awarded Research Fellowships to 11 outstanding graduate students at USU;

Leslie Sobin, M.D., Off-Campus Faculty Member and Lecturer, USU SOM Department of Pathology, received the University Medal on May 22, 2003, on the basis of her prolonged contributions to the teaching programs of the USU SOM Department of Pathology. Doctor Sobin has lectured the USU SOM second-year medical students extensively on her subspecialty in Pathology, thus greatly enriching the curriculum for the SOM students. She is a world-recognized leader in Pathology and has delivered all of the USU SOM lectures

on Gastrointestinal Pathology, since 1981. She is a superb lecturer and was nominated for the University Medal for her outstanding contributions, for over 23 years, to the USU SOM Department of Pathology; and,

Diane Solomon, M.D., Off-Campus Faculty Member and Lecturer, USU SOM Department of Pathology, received the University Medal on May 9, 2003, on the basis of her prolonged contributions to the teaching programs of the USU SOM Department of Pathology. Doctor Solomon has lectured the USU SOM second-year medical students extensively on her subspecialty in Pathology, thus greatly enriching the curriculum for the SOM students. She is a world-recognized leader in Pathology and has delivered all of the USU SOM lectures on Breast and Cervical Pathology, since 1986. She is a superb lecturer and was nominated for the University Medal for 18 years of outstanding contributions to the USU SOM Department of Pathology.

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The Carol J. Johns Medal.

Background. **Carol J. Johns, M.D., Professor, John Hopkins School of Medicine,** was a long-time enthusiastic and effective supporter of the University. Doctor Johns worked for the health and survival of the University in numerous ways. She served as a member of the USU Board of Regents from 1985, until her death, in 2000. A warm and gifted woman with remarkable personal humility and gentleness, Doctor Johns achieved the highest honors in academic medicine as a nationally recognized clinician, academician, and teacher. The University established an annual award in her name, the ***Carol J. Johns Medal***. The Medal will honor the faculty member whose accomplishments emulate Doctor Johns' spirit in: furthering the welfare and excellence of the USU faculty; promoting outstanding educational programs for the students; and, advancing the reputation of the University locally, nationally, and internationally. The Carol J. Johns Medal was presented for the first time during the 2001 USU Commencement Ceremonies. Two individuals were chosen to receive the award during the 2002 USU Commencement Ceremonies; and, one individual received the award during the 2003 USU Commencement Ceremonies. As of April 2004, a total of four individuals have received this prestigious award.

Recipients of the Carol J. Johns Medal:

2001 **Louis Pangaro, M.D., Colonel, MC, USA (Retired), Professor, USU SOM Department of Medicine,** was the first individual to receive the newly established Carol J. Johns Medal, during the 2001 USU Commencement Ceremonies, on May 19, 2001. Doctor Pangaro was selected due to his internationally recognized leadership in academic medicine and his commitment to the promotion of

outstanding educational programs, which are acknowledged by his on-going selection to university and national initiatives dealing with curriculum reform;

2002 **Rosemary C. Borke, Ph.D., Professor, USU SOM Department of Anatomy, Physiology and Genetics,** was nominated by the USU Faculty Senate for the 2002 Carol J. Johns Medal. Doctor Borke is recognized as: an outstanding educator of medical and graduate students; an innovative leader in the development and implementation of curricula; a model for faculty leadership at the Department and University level; and, an internationally recognized expert in the area of peripheral nerve injury and repair. Her involvement in, and contributions to, all aspects of USU faculty service have established a level of unsurpassed excellence that stands as a model for all USU faculty. She has demonstrated excellence in promoting outstanding educational programs, furthering the welfare and excellence of the USU faculty, and advancing the reputation of the University locally, nationally, and internationally;

Val G. Hemming, M.D., Colonel, USAF, MC (Retired), Professor and Dean Emeritus, School of Medicine, was chosen to receive the Carol J. Johns Medal, during the 2002 USU Commencement Ceremonies, on May 18, 2002. Nominated by the USU Faculty Senate, Dean Hemming was recognized for his endeavors in research for over 20 years. His research led to an innovative treatment that prevents death and disability from Respiratory Syncytial Virus infection in vulnerable pre-term infants. During his term of service as the Dean of the School of Medicine, he continued his on-going efforts to improve and reform the curriculum of the medical school. As with the rest of the Nation, the USU SOM faced a marked reduction in the number of patients available to students during their clinical rotations. To address this concern, Dean Hemming was instrumental in the development and implementation of the USU National Capital Area Medical Simulation Center (SIMCEN), which allows the effective and efficient use of simulated patients. In addition, the SIMCEN facilitates the implementation of the latest technological and educational advances for the teaching of physicians and students. His success in this effort will guarantee the value of USU as a resource for the effective training and testing of medical students and for the continuing medical education of health care providers for generations to come; and,

2003 **Norman M. Rich, M.D., F.A.C.S., Professor and Chair, USU SOM Department of Surgery,** was awarded the Carol J. Johns Medal, during the 2003 USU Commencement Ceremonies, on May 17, 2003. Since the inception of the University, Doctor Rich has continuously provided support and encouragement to the faculty, students, and graduates of the School of Medicine. Following a distinguished Army career, his military awards include: the Legion of Merit, Bronze Star, Meritorious Service Award, and Vietnam Medals. As the first Chair of the USU SOM Department of Surgery, Doctor Rich has contributed to the

international awareness of the University through his multiple memberships in elite societies and associations and the organization of on-going visits by prestigious organizations to USU. Doctor Rich was named the USU SOM Outstanding Civilian Educator, in 1983; he received the USU Exceptional and Outstanding Service Medals, in 1989 and 2001; and, he was awarded the University Medal, during 2001. In 1999, he received *The J.E. Wallace Sterling Lifetime Alumni Achievement Award* from the Stanford Medical Alumni Association; and, on October 11, 2002, the USU President announced the establishment of *The Norman M. Rich Department of Surgery*. Doctor Rich has earned international recognition for his work, lecturing in more than 35 countries; he has published over 300 manuscripts and has been the author or co-author of five books. He has held multiple leadership positions in a variety of surgical societies; he is also a member of numerous international surgical societies; and, he has received Honorary Medical Degrees and Professorships from universities in more than five countries. After 28 years at USU, Doctor Rich has succeeded in establishing an outstanding educational program for the USU SOM students; in addition, under his leadership, surgical skills laboratories, simulation training, and virtual trainers have been incorporated to provide surgical training that is recognized both nationally and internationally.

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The Year 2003 Curreri Award.

Background. Following his retirement as the first University President in November of 1976, **Anthony R. Curreri, M.D.,** was awarded the Department of Defense (DoD) Distinguished Public Service Award. The DoD award, presented in 1977, cited Dr. Curreri for "collaborating with the military departments and for the development of the overall objectives and goals of the University to develop and implement an educational system of the highest quality to serve the physician manpower needs of the military services." The 1996 Graduating Class of the School of Medicine established the Curreri Award to recognize exceptional contributions to the continuation and well being of the University and to memorialize the leadership of Dr. Curreri as USU's first President. Since the initial award in 1996, all of the graduating classes (SOM, GSN, and Graduate Education) have participated in selecting the recipients of this award. Doctor Curreri was awarded an Honorary Degree, posthumously, on January 10, 2002, by the USU community.

Recipients of the Curreri Award:

1996 **Vorley M. (Mike) Rexroad, BG, U.S. Air Force (Retired);**

1997 **John Dressendorfer;**

1998	**Lorraine B. Sanford;**
1999	**Charles C. Partridge, COL, USA (Retired);**
2000	**Enrique Mendez, Jr., M.D.;**
2001	**Frederic G. Sanford, M.D., RADM, MC, USN (Retired);**
2002	**Barry W. Wolcott, M.D., COL, MC, USA (Retired); and,**
2003	**The Honorable Robert E. Anderson, M.D.**

The Honorable Robert E. Anderson, M.D., Former Member of the USU Board of Regents, Receives the 2003 Curreri Award. On May 17, 2003, the USU graduating classes awarded the 2003 Curreri Award to **The Honorable Robert E. Anderson, M.D.** The award recognized Doctor Anderson for his on-going and extraordinary support of USU. Doctor Anderson is a retired Professor, Department of Laboratory Medicine and Pathology, University of Minnesota Medical School, Minneapolis. Prior to his position as Professor, he was the Vice President, Health Sciences, at the University of Minnesota. Doctor Anderson held various positions at the University of New Mexico, Albuquerque, from 1964 to 1991, including Chairman, Department of Pathology, School of Medicine. During his distinguished career, Doctor Anderson has received several awards, including his selection as a *Markle Scholar in Academic Medicine* and as an *Honorary Fellow, College of American Pathologists*. Throughout his career, Doctor Anderson has held numerous research appointments as Principal Investigator and Co-Principal Investigator, primarily in the area of radiation injury. He has also held a variety of positions with the Department of Veterans Affairs, both in Washington, D.C., and at field locations. In addition to his management experience as Vice President, Health Sciences, University of Minnesota, he has served as the Chairman of the Budget and Finance and Public Affairs and Grant Relations Committees, and as the President of the Association of Pathology Chairman. Further, he has had wide experience in curriculum development, graduate education, graduate medical education, research policy, faculty promotions, and strategic planning. Appointed as a Member of the USU Board of Regents by the President of the United States, with Congressional approval, in 1996, and serving through August of 2002, Doctor Anderson provided invaluable leadership to the University due to his vast experience and skills in strategic planning and program development.

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The Packard Lecture.

Background. The Packard Lecture Series was named in honor of **The Honorable David Packard** (September 7, 1912 - March 26, 1996), distinguished friend and supporter of the University. Mr. Packard was the Deputy Secretary of Defense, when USU was created in 1972. He served as the first Chairman of the USU Board of Regents; and, he was the Acting President of the University, from 1976 to 1981. Mr. Packard also served as the first Chair of the Council of Directors of the Henry M. Jackson Foundation

for the Advancement of Military Medicine, for over six years. The USU Faculty Senate established the Packard Lecture, in 1985, to annually honor individuals who have made significant contributions to the military medical community; it is considered among the greatest honors bestowed by the USU faculty.

The David Packard Lecture Series:

1985 Enrique Mendez, M.D.	***Teaching Humanism to Medical Students***
1986 Joshua Lederberg, Ph.D.	***The Complexity of Biological Systems***
1987 C. Everett Koop, M.D.	***The Fight Against AIDS***
1988 Robert Petersdorf, M.D.	***Some Issues in Graduate Medical Education***
1989 ADM James Watkins, USN	***AIDS, The Political, Ethical and Social Aspects***
1990 Arnold Relman, M.D.	***Scientific Misconduct***
1991 VADM James A. Zimble, MC, USN	***Navy Medicine Goes to War, A Time For Evaluation, Reflection and Discussion***
1993 Philip R. Lee, M.D.	***Re-Inventing Public Health***
1995 David A. Kessler, M.D.	***Accelerating Approval for Drugs for Serious and Life Threatening Diseases***
1996 Joseph A. Califano, Jr.	***Radical Surgery: What's Next for America's Health Care***
1997 Michael DeBakey, M.D.	***History, the Torch that Illuminates Lesson from Military Medicine***
1998 Francis D. Moore, M.D.	***New Kinds of War: New Kinds of Peace***
1999 Senator Nancy Kassenbaum Baker	***The Federal Advisory Committee on Gender Integration Training and Related Issues***
2000 David P. Stevens, M.D.	***The Future of Medical Education: Bytes, Ticks and Finding Your Way***
2001 Wayne T. Hockmeyer, Ph.D.	***Perspectives in Biotechnology***

2002 Kenneth M. Ludmerer, M.D. ***The Coming of the Second Revolution in Medical Education***

The 2002 David Packard Lecture Featured Kenneth M. Ludmerer, M.D., Professor of Medicine and History, Washington University, St. Louis. The President of the USU Faculty Senate, **Linda L. Porter, Ph.D., Professor, USU SOM Department of Anatomy, Physiology and Genetics**, reported to the USU Board of Regents, on August 25, 2002, that one of the significant highlights of the Faculty Senate, during 2002, was its sponsorship of the 2002 Packard Lecture which featured **Kenneth M. Ludmerer, M.D., Professor of Medicine and History, Washington University, St. Louis.** On May 9, 2002, 220 members of the USU faculty and staff attended the David Packard Lecture in the Sanford Auditorium. Doctor Ludmerer, an eminent internist, medical educator, and historian of medicine, delivered a lecture entitled *The Coming of the Second Revolution in Medical Education*. The lecture presented an overview of his recently released book, Time to Heal, which examines the evolution of American medical education from the turn of the Century to the present era of managed care. The 2002 Packard Lecture was well received and considered to be most relevant by the USU community.

Doctor Ludmerer is best known for his work in medical education and the history of medicine. His first book, Genetics and American Society (1972), a study of the American Eugenics Movement, was placed by *Saturday Review* on its list of the year's outstanding science books. His second book, Learning to Heal (1985), on the creation of America's system of medical education, was nominated for a Pulitzer Prize and Bancroft Prize. His recently released, Time to Heal (1999), has been called by reviewers ***a masterpiece of great national importance*** and ***the most important work in medical education since the Flexnor Report***. This book was nominated for a Pulitzer Prize and Bancroft Prize and is the first book by a living author to be selected for inclusion in The Classics of Medicine Library.

Doctor Ludmerer is a member of Phi Beta Kappa, Alpha Omega Alpha, the Association of American Physicians, the American Clinical and Climatological Association, and the American Academy of Arts and Sciences. He is a Fellow of the American Association for the Advancement of Science and the American College of Physicians. He is also President of the American Association for the History of Medicine and a member of the National Council of Harvard Medical School. He has served on the editorial boards of eight professional journals and has delivered named lectures at over 100 educational institutions or professional societies. In 1997, he received the Nicholas E. Davies Award of the American College of Physicians for Outstanding Contributions to the Medical Humanities; in 2000, the Distinguished Alumnus Award of the Johns Hopkins University; and, in 2001, the Inaugural Daniel C. Tosteson Award for Leadership in Medical Education from Harvard Medical School's Carl J. Shapiro Institute.

(***The next scheduled Packard Lecture will take place during 2004***.)

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TEACHING AND RESEARCH SUPPORT

Background. The nine activities organized under the Office of the USU Vice President for Teaching and Research Support (TRS) were originally established as part of the School of Medicine (SOM). As the University's activities and programs expanded to include the Graduate School of Nursing, Continuing Education for Health Professionals, and the Armed Forces Radiobiology Research Institute, it became apparent that the central support functions of TRS were no longer limited to the SOM. As a result, the TRS activities were moved from responsibilities designated to an Associate Dean in the SOM, to a University Vice President. As this evolution occurred, it was also determined that these activities should be called Centers to more accurately reflect their missions as central resources for USU. The nine TRS Centers, during 2003, included: the Audio Visual Support Center; the Center for Multidisciplinary Services; the Learning Resource Center; the Center for Informatics in Medicine; the Center for Laboratory Animal Medicine; the Center for Environmental Health and Occupational Safety; the Biomedical Instrumentation Center; the Information Services Management Center; and, the Pharmaceutical Supply Center.

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The Audio Visual Support Center.

Visual communications media can demonstrate cause and effect relationships to convey complex concepts, furnish flawless demonstrations, and interactively involve students to learn in less time and more effectively than through or by traditional approaches.

- Herman Lewis, Educational Films: Writing, Directing, and Producing For Classroom, Television, and Industry, Crown Publishing Incorporated, New York, New York, 1965.

The USU Audio Visual Center (AVC) functions as an essential teaching and research support resource for the USU faculty and staff; it provides support for education and research in the form of computer graphics, still photography, video, multimedia products, and consultation services. ***The Medical Photography Branch*** provides professional photographic services to include: patient photography in a clinical setting; gross specimen photography for Pathology and Anatomy studies; documentation of research projects; and, coverage of University events for public affairs programs. Photographic laboratory services include: custom printing; film processing support; digital image enhancement; traditional slide duplication; flat art copy; small object studio subjects; and, portraiture services. ***The Computer Graphics Branch*** provides graphic art services for charts, graphs, and text of medical/scientific information in journal publication, poster session displays, and 35 mm slides for classroom presentations. Detailed original medical illustrations in full color, or line drawings, are prepared to supplement teaching programs, accompany articles for publication, or illustrate research displayed in poster sessions. A variety of products are designed for Internet and electronic delivery in support of medical education and

training programs. Signs, forms, brochures, logos, books, covers, folders, and flyers are also produced in support of academic and administrative functions. ***The Medical Television Branch*** provides studio and remote video tape recording and broadcast services. Extensive editing, titling, and duplication are provided in support of laboratory demonstrations, field exercise documentation, and classroom lectures. Multimedia (CD-ROM/DVD) production and web page design services are also available to enhance course materials and for the distribution of University information. ***Facility Renovation.*** During the Summer of 2003, the Heating, Ventilation, and Air Conditioning (HVAC) Systems were renovated in the AVC office areas. Upon the conclusion of the HVAC renovation project, the AVC was resourced to fully install soundproofing in its Television Studio and efficiently relocate equipment.

Support for CFC and other USU Activities. For the sixth time, the USU AVC won the award for the Best Designed Poster for the Department of Defense, during the 2003 CFC Campaign; **Ms. Rachel Oakes** created the winning entry. ***Support for CD-ROM Production.*** For the second time, in collaboration with the USU Vice President for Administration and Management, AVC developed a CD-ROM version of the *2002 Edition of the USU Journal*; designed in-house, and replicated through the use of a DoD contract. The electronic format of the USU Journal provides direct and searchable access to the wealth of information provided in the annual edition of the USU Journal. Copies of the *2002 Edition of the USU Journal*, in CD-ROM format, were provided to the 331 members of the USU faculty, the USU Board of Regents, the Surgeons General of the Uniformed Services and their immediate staffs, the Commanders of Military Treatment Facilities throughout the Defense Health Program, the Congress of the United States, and many others; it was also placed on the USU Web Site. ***Production of a Student Manual.*** AVC also provided design and production support for a training and reference manual for USU students to facilitate their education in military medicine. The manual is specifically tailored for field use by the military medical community; it is produced on waterproof paper and sized to fit into a student's pocket. ***Medical Simulation and Responding to Bioterrorism.*** Throughout 2003, the AVC provided on-going support to the National Capital Area Medical Simulation Center (SIMCEN), specifically during the conceptual planning and design of a Computer-Aided Virtual Environment (CAVE). The CAVE is designed as an immersive, virtual reality environment suitable for simulating mass casualty, triage and/or biological-chemical training scenarios. Students would be physically immersed in a virtual environment with patients, which could be either virtual, live, or high fidelity computer-driven patient simulators. Another project has included the provision of support to the USU SOM Department of Psychiatry in developing materials to help teenagers cope with the traumatic stress caused by threats of bioterrorism.

Archiving of Historical Images for USU and the Joint Combat Camera Center. The Office of Teaching and Research Support, in conjunction with several USU activities, continued the on-going development of a digital archive of historical images for the University. The annotated database of USU's historical images began with significant images related to the University's Board of Regents. By the end of 2003, thousands of images have been viewed, evaluated, edited, digitized, captioned, catalogued by subject matter, and archived. The current effort is focused on images from twenty-five years of USU commencement exercises. ***Collaboration with the Joint Combat Camera Center.*** Through cooperation with the Joint Combat Camera Center, the AVC has begun the collection of medically-related photos taken during the deployment of United States Forces to Iraq. These photos provide insight into the medical mission of the coalition troops stationed, in Iraq.

Center for Multidisciplinary Services.

The existing general facilities for teaching are excellent. Teaching and research support activities are providing a high quality of service to both academic departments and administrative/support activities.

- *Institutional Resources*, Chapter III, USU Self-Study Report to the Commission on Higher Education of the Middle States Association of Colleges and Schools, prepared for the 2003 Site Visit, page III-12.

On-Going Renovation, Upgrades, and Support for the USU Teaching Mission. By 1996, the USU Center for Multidisciplinary Services (MDL), the USU Faculty Senate, the Offices of the Deans of the SOM and GSN, and the USU President were aware that the teaching tools available in the lecture halls and auditorium required major renovation. Based on surveys of students, faculty, and staff, an engineering design was commissioned to upgrade the equipment; the project was then expanded to include the replacement of both carpeting and seating. The Office of the Vice President for Teaching and Research Support and MDL successfully coordinated a major renovation of the teaching tools in the Sanford Auditorium and the USU lecture halls, during 1998 and 1999. Since then, and throughout 2003, subsequent upgrades of the teaching facilities have been on-going, to include a major purchase of tables and chairs for the teaching classrooms, in September of 2001; and, the obligation of funding for the renovation of Lecture Rooms A and B, during 2003. All of these activities are in compliance with Goal 5, STEWARDSHIP, of the USU Strategic Plan. By upgrading the lecture halls, classrooms, and the auditorium, USU has enhanced its ability to: provide a quality educational environment for its students, faculty, and staff; conduct continuing medical education; and, sponsor military medical conferences for the MHS in a manner that will enhance the reputation of USU as a premier health sciences academic institution.

Renovation of USU Lecture Halls. All of the USU lecture halls have been designed with the same equipment and controls so that instructors and students can learn one system and move from one lecture room to the next without having to adjust to unfamiliar teaching tools. The upgraded equipment provides the faculty with a broader range of teaching tools to present their material. On-going upgrades include: 1) the installation of upgraded audio and projection equipment; 2) the provision of computer capability and Internet access; 3) enhanced video capabilities in each room, to include in-house cameras for overflow viewing throughout the campus; and, 4) *smart* classroom capabilities in Lecture Room C, to include video-teleconferencing and a state-of-the-art audience response system. A majority of these upgrades took place during the summer of 1998; and, equipment installation occurred around class schedules, throughout 1998 and 1999. Similar upgrades are also being planned for the Board of Regents Conference Room, selected conference rooms throughout the campus, and the Multidisciplinary Laboratories. In September of 2000, resources were identified to obtain computer and video projector equipment to upgrade the major USU conference rooms with systems similar to those available in the lecture halls; this upgrading process continued, throughout 2001.

By 2003, the MDL had completed the installation of new video projectors in all of the USU lecture rooms. This was in keeping with the original upgrade plan for the redesign of the USU lecture hall control systems, as described above. The control systems, installed during 1998-1999, allowed the lecturers to control various aspects of the audiovisual support as well as to facilitate future upgrades of the equipment within the lecture halls without having to change an entire system. The on-going process of upgrading the video projectors has proven to be a simple process due to MDL's careful planning for future requirements.

Renovation of the Anatomical Teaching Laboratory. In 1998, it was identified that the working and storage areas and the freezers in support of the Anatomical Teaching Laboratory (ATL) required significant renovation. Following coordination with the Vice Presidents for Administration and Management, Resource Management, and Teaching and Research Support, funding was identified, in September of 2001, for the renovation of the working and storage areas and the replacement of the ATL freezers. Following extensive consultation and planning by the USU Facilities Division, the Anatomical Curator, and the Navy Public Works Center, the renovation project began, in December of 2001, and was successfully completed, during 2002. During 2003, designs and cost estimates were coordinated with the USU Facilities Division, the Anatomical Curator, and the Navy Public Works Center to upgrade the air handler unit that services the anatomical teaching laboratory; resources were identified and the project was funded, at the end of 2003.

Upgrades for the Teaching Laboratories and Conference Rooms. In the past, the University utilized oscilloscopes and chart recorders to facilitate the teaching of physiological changes, due to disease and treatment, in the first-year teaching laboratories. These units were failing and replacement equipment was becoming increasingly unavailable. Following the identification of the need to replace the twenty-five-year-old system, MDL planned, justified, secured funding for, purchased (during 2000), and installed (during 2001) a system of computer-based teaching workstations at each of the first-year laboratory tables. Since the installation of the computers in the teaching laboratories, the USU SOM Department of Anatomy, Physiology and Genetics (APG) has utilized the new resource for laboratory exercises. The students learn to monitor their heart rates and to run a series of experiments studying the changes in heart rates. Once students have become familiar with the basic operation of the equipment, it is used in the advanced cardiac physiology laboratory exercises. Both of these teaching laboratories have been judged to be quite successful by the students and faculty. *While the computers were purchased primarily to replace the physiological recorders mentioned above, they have become a source of greatly expanded, computer-assisted, teaching applications in a variety of disciplines.* For example, because of the powerful nature and adaptability of these new tools, the MDL received requests from Biochemistry, APG, Neuroanatomy, Microbiology and Immunology, Pharmacology, and Radiology and Radiological Sciences for the expanded use of this equipment in their laboratory exercises. Through the utilization of the centralized and networked controls of this computer system, a wide variety of demonstrations, laboratory simulations, experimental exercises, and testing procedures are currently being used, or are under development for expanded use, by multiple SOM Departments. Additionally, this equipment is planned for use in computer-based testing applications. These demonstrations, simulations, exercises, and procedures have been found to provide cost-effective, true-to-life, experiences for students that were not formerly available; and, they have been so successful that plans have been made to duplicate the system, throughout the second-year student laboratories.

During 2002, the MDL procured and integrated eight new LCD projectors for use in the USU laboratories and conference rooms. Because many USU departments have increased their use of computer presentations, during laboratory exercises and lectures, the MDL has been increasing its state-of-the-art computer projection equipment for use by the USU community. This has allowed the instructors greater flexibility in selecting the teaching modality for presenting material to the students. In fact, the MDL ordered sufficient LCD projectors to permanently mount one in each teaching area and increase user capability, throughout the USU laboratories and conference rooms; this upgrade was mostly completed, during 2003. Also, during the past year, the University leased an additional fifty computers for use throughout the MDL. These, added to the original fifty, have significantly increased the capabilities for the instructors to use a broad range of tools for instructing USU students. As described above, the SOM Department of Anatomy, Physiology, and Genetics utilizes the computers in three of four teaching blocks; and, the Pathology Department was among the first to utilize the computers for testing medical students. Based upon the success of Pathology's process, several other SOM Departments were interested in similar activities, during the 2003 Academic Year; the students also use the computers as an additional study resource for reviewing class materials and presentations. During 2002 through 2003, the MDL replaced the computers used for presentations throughout all of the USU lecture halls; again, that process was streamlined, due to excellent planning by MDL, for future upgrades.

Scheduling of Room Requests for the University. Throughout 2003, the MDL managed and supported over 2,500 room requests for teaching and meeting requirements; many of which were for multiple rooms over numerous timeframes. Support has been provided by the MDL staff for numerous international conferences and workshops, during the past years. The MDL continues to provide superb service to faculty, students, and staff at USU (as noted during the Self-Study for the Middle States Commission completed for the 2003 Site Visit) and to meet the needs of the military medical community for space and teaching support.

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The Learning Resource Center - Globally Available.

The Learning Resource Center staff is highly trained and knowledgeable and is responsive to the needs of students and faculty... The LRC staff is effective in meeting the changing demands of the University community. ***They have blended the traditional print resources with the electronic versions to achieve a broader scope of information that is accessible worldwide.*** **The growing collection of unique web-based resources will enhance the University's position in the academic world.**

The physical library is well maintained and cataloged. In conjunction with its mediated database and interlibrary loan services, it provides ready access to biomedical and clinical information in support of educational programs. A variety of computerized web-based resources supports information retrieval and management, and offers students opportunities for self-paced learning. The LRC has also made a strong commitment to working in teams with the academic departments to develop programs and services to better serve its user populations.

- *Institutional Resources*, Chapter III, USU Self-Study Report to the Commission on Higher Education of the Middle States Association of Colleges and Schools, prepared for the 2003 Site Visit, page III-14.

World-Wide Access for Health Sciences Information. The Learning Resource Center (LRC) ensures that students, faculty, alumni, and other members of the USU community can continuously access current medical and scientific knowledge-based information twenty-four hours a day, seven days a week. This is accomplished through the LRC's unique Remote Computer Services (RCS), using Web technology to deliver content. LRC customers/patrons are provided immediate access to electronic books, journal articles, and data bases in the practice of evidence-based health care; they may be searching for a new or alternative treatment, diagnostic tests, background information for case presentations, or literature in preparation for a research article or grant. They can do so whether or not the LRC is open and from a duty station, anywhere, in the World.

Throughout 2003, the LRC continued to ensure that its electronic resources were globally accessible. Unique gateway software enabled users to access on-line health care information from Kosovo, Japan, Iceland, Bosnia, the Republic of Georgia, Germany, Iraq, Italy, the United Kingdom, Turkey, and Saudi Arabia, on board ships traveling around the World, and from sites located throughout the United States. Selected examples of the LRC customer base include: all four classes of USU medical students; Graduate School of Nursing students; USU graduate students; USU alumni; distance learning students; USU faculty both on and off campus; health care providers throughout the Military Health System (MHS); and, the Office of the Secretary of Defense. Not only did the LRC Remote Computer Services provide access to the USU electronic services for the USU family, it also provided access to additional electronic books, journals and data bases from other Federal scientific, medical, and research libraries. ***The LRC added servers to support an increasing computational load; it tallied its entire user***

base of 7,850 customers to determine that there was an average of 17,000 accesses per month, or a total of 210,000 accesses, during 2003.

Enhancement of Customer Service. During 2003, the LRC began a quarterly electronic newsletter to inform its patrons of new and changing library services. The revamped and up-dated *Patron Handbook* details library services, hours, contact information and procedures. In addition, a new, attractive public relations hand-out was developed, during 2003. The LRC cut its delivery time of materials to other libraries to 24 hours or less, down from the previous response time of one to two weeks. The LRC staff provided articles to other libraries within four to 24 hours, during the business week (*in general, the LRC completed loan requests, during 2003, within four to six hours*). ***Patient care requests, issued on an urgent basis, were generally completed within one hour of the initial request***. Once an article has been screened into the *ARIEL* software, instant transmission can take place over the Internet. The LRC routinely utilizes the *ARIEL* software to transact inter-library loans, at any time, during the day.

In 2003, the LRC became a member of E-Delivery Southeastern Atlantic Region (ESE/A), which is a consortium of *Doc-line* libraries in the National Network of Libraries of Medicine Southeastern/ Atlantic Region. ESE/A members provide electronic delivery of inter-library loan documents, within 48 hours; this, in turn, has facilitated the expeditious delivery of inter-library loans for the USU customers. The inter-library loan service works well for USU; and, the LRC can rapidly receive articles for its patrons. The LRC staff continued to meet traditional information requirements by providing print articles and books to its patrons and libraries around the World. ***During 2003, 2,800 articles or books were requested by the LRC from other libraries; this was an increase of 1,100 items over 2002***. This increase may result from the expanded use of *Loansome Doc*, a user-friendly method for ordering articles, after accessing *PubMed* or the *NLM Gateway*, and/or the increased instruction, provided to the LRC patrons, by LRC staff on the usage of on-line data bases, over the past year.

The LRC filled 5,358 of its patrons' requests for books and journal articles, during Calendar Year 2003. Requests were generated from local hospitals, universities, and medical schools, as well as the National Institutes of Health (NIH), entities collaborating with Fort Detrick, the Walter Reed Army Institute of Research (WRAIR), the Walter Reed Army Medical Center (WRAMC), to name a few. The LRC also reached many physicians, nurses, students, and patients by providing medical articles, which they had requested through their local medical or public library.

Renovations During 2003. The physical environment of the LRC underwent significant renovation, during 2003. Due to careful coordination with the USU Facilities Division and the tremendous patience and dedication of the LRC staff, the implementation of the much-needed renovations described below did not prevent the LRC from supporting its patrons, during the past year.

Renovation of the Heating, Ventilation, and Air-Conditioning (HVAC) System. During 2003, the HVAC System throughout the LRC was replaced, following the identification of the essential requirement to replace an antiquated system, that was no longer providing adequate service, throughout

the LRC. This was an extensive, time-consuming process; and, although the work took place during the evening hours, it did impact the customers' usage of normally open and accessible areas. However, the benefits now enjoyed by the LRC staff and their patrons, has more than justified the temporary inconveniences experienced, during the renovation process. Indeed, the new HVAC System not only provides a more comfortable environment, it is also serving to better preserve the books and journals within the LRC. ***Replacement of Carpeting in the LRC.*** During the Fall of 2003, the LRC experienced the much-required, yet, inconveniencing replacement, of its carpeting. As with the HVAC renovation project, work was scheduled during the evenings; however, once again, the process briefly impacted the access of patrons, during working hours. Again, the final result was found to be well worth the temporary inconvenience. ***Relocation of the Circulation Desk.*** With the HVAC renovation and the replacement of carpeting, the LRC recognized an opportunity to relocate the circulation desk nearer to the front entrance of the LRC; now, the patron is greeted by LRC staff upon entering and exiting the LRC.

Reliable Leadership and User-Friendly Access.

The Learning Resource Center is noted as one of the best assets of the University by both faculty and students. A recent faculty survey revealed the majority of both on- and off-campus respondents to be satisfied or very satisfied with library services. Students are consistent in their praise of the facility and of the accessibility and helpfulness of the staff.

- **Report of the Evaluation Team, Commission on Higher Education of the Middle States Association of Colleges and Schools**, April 2, 2003.

Since its establishment, the LRC has succeeded in providing both an outstanding learning environment and state-of-the-art educational tools for the USU students and faculty. Following the retirement of **Chester J. Pletzke, Founding Director of the USU Learning Resource Center,** during 2002, a Nation-wide search was conducted by the University. In mid-November of 2002, **Ms. Ursula Scott was selected as the new Assistant Vice President for the LRC.** In this position, Ms. Scott not only has oversight for the LRC, she also focuses on outreach activities. This outreach includes providing a gateway to electronic content for other DoD research or medical libraries, along with group purchases. (During February of 2004, Ms. Scott was elected to serve a three-year term, beginning in May of 2003, as the Chair of the Federal Library Section of the Medical Library Association.) **Ms. Janice Powell Muller served previously as the Acting Director of Campus Learning Resources; since the hire of Ms. Scott, she has held the title of Director of Campus Learning Resources**.

Recognition Received During 2003. During 2003, the LRC received three, much appreciated, accolades from its patrons. The first of these was a *Letter of Recognition* from the USU Faculty Senate, thanking the LRC staff and relaying the results of the faculty survey in preparation for the Site Visit from the Middle States Commission on Higher Education (quoted above). The survey results verified that the LRC "received consistently satisfied ratings and several very complimentary comments. Eighty-six percent of the faculty members who responded to this question (208 of 242) indicated that they were

satisfied or strongly satisfied with the LRC services." In addition, the USU Class of 2005 presented the LRC team an *Award of Appreciation*; and, the 2003 Faculty Senate Research Committee presented the LRC staff with a *Meritorious Service Award*, a plaque, which is displayed near the LRC entrance.

Reference Services. Reference services continued to expand, during 2003. A new emphasis on teaching was demonstrated with over 15 classes, provided by the LRC staff, on *MEDLINE/PubMed* searching, public health resources, *Current Contents Connect*, and *EndNote*. In addition, a series of classes on library resources and publication strategies was designed for the Graduate School of Nursing and the Master in Public Health Program. The LRC Reference Department was asked to address incoming advanced nursing and graduate students, shortly after their arrival at the University; thus, providing an early orientation to the LRC.

Research guides and bibliographies were updated. A new guide was also developed for the faculty and residents in the National Capital Consortium. This guide now serves as a resource for pediatric clinicians, with links to clinical resources, such as growth charts, immunization guides, pediatric calculators, and the LRC full-text electronic resources. The LRC highlighted its resources during Research Day, in May of 2003, and prepared a bibliography on Translational Research, with links to full-text resources, available through the LRC on Remote Computer Services.

Essential Science Indicators, an ISI evaluation tool, ranks the top journals and nations, and the top 1 percent of scientists, institutions and companies by field of research. To be even listed in any one category, an institution has to be in the top 1 percent by number of citations in the period covered by Essential Science Indicators (ESI). For the period covering the last ten years, the LRC was able to validate that USU ranked in the top 1 percent in seven fields: Clinical Medicine; Immunology; Biology & Biochemistry; Microbiology; Neuroscience & Behavior; Psychiatry/Psychology; and, General Social Sciences. This rating was based on the number of citations received by papers published by the USU faculty, during the period. With the acquisition of ISI's Current Contents Connect and other electronic resources, the reference department was also able to help patrons set up search alerts on their research topics. In September of 2003, the LRC purchased Journal Citation Reports (JCR), which is a source for impact factors of various journals in science and social science. In addition, the LRC Reference Librarian was actively involved with the Bioethics class given to the second-year medical students as a discussion facilitator, as well as providing library instruction for the Bioethics paper; the Reference Department continued to provide mediated searching for faculty and students, as well as *EndNote* assistance for patrons preparing manuscripts for publication.

Remote Computer Services. Since its establishment, the LRC has continued to diversify and update its resources to meet its customers' changing requirements. For the first time, the administrative data bases were redesigned, resulting in statistical reporting by electronic service, throughout 2003. This function now offers USU administrators improved data, with which, to make funding decisions. Several large projects were undertaken to design custom pages for new initiatives; the header space, which had been previously empty, is now filled with library information, the USU seal, and selected other links. A copyright statement pertaining to the LRC electronic resources was also incorporated.

Computer Classroom/Laboratory. The LRC's computer classroom provides 40 workstations, to include an instructor's station. When it is not being used for classes, the students utilize the laboratory for assignments and electronic activity. The LRC Computer Classroom hosted 164 teaching sessions during 2003, with twenty to thirty sessions per month. LRC staff reserve, prepare the set-up of equipment, and provide technical assistance for these classes. The classroom was used for academic instruction with hands-on practice by the following USU activities: Departments and Programs in the SOM (Biomedical Informatics; Dermatology; Family Medicine; Medical and Clinical Psychology; Molecular and Cell Biology; Pharmacology; and, Preventive Medicine and Biometrics); the Graduate School of Nursing; Faculty Development; Contracting; the Learning Resource Center; Finance; and, University Information Systems. In addition, the Graduate School of Nursing and the Departments of Pathology and Dermatology made extensive use of the classroom for on-line examinations and quizzes.

Library staff members taught sections in *Introduction to Computers for Molecular and Cell Biology*, *Computer Fundamentals for Master of Public Health*, *Nursing Research*, *Educational Methods*, *PubMed*, and numerous faculty development seminars and student, faculty, or staff orientations. In addition to the computer classroom, there are approximately 50 additional computers available in the LRC for student and faculty use. While the majority of computers are PC's, the LRC does provide 23 MacIntosh OS computers. There are heavy-duty printers, scanners and CD burners, along with special software packages, which are also used for educational purposes.

Microcomputer Help Desk. Members of the LRC's Applied Medical Informatics Branch staff the help desk. They answer technical questions in-house, on the telephone, and from e-mails sent by clinical faculty, students, and researchers on assignments around the World. The help desk not only supports the computers in the LRC, but also provides assistance to patrons experiencing problems related to the Remote Computer Service. The help desk is part of the effort to provide extraordinary customer service, as well as to assist students in becoming *computer literate*, as appropriate.

Internet Information Resources During 2003. During 2003, the LRC staff continually updated and refined data bases, which gave thousands of patrons access to electronic medical and military resources, over the Internet. With more than 6,500 electronic books, journals, and data bases available to LRC users, making certain that all links and holdings were accurate required extensive manpower.

1) ***Books.*** Standard textbooks are available in all major medical specialties. All electronic editions are constantly updated; and, thus provide the most current information for the practice of health care. Currently, there are more than 289 full-text electronic books available, through the LRC. The collections purchased by the LRC are Books at *Ovid*, *Stat!Ref*, *AccessMedicine*, *AccessScience*, *Annual Reviews*, and individual books, such as *Scientific American Medicine*.

2) ***Journals.*** Conversion to the electronic editions of health-related journals, or periodicals, continued throughout 2003. The LRC currently has 6,322 full-text journal titles available on-line. Publishers continued to expand their on-line offerings; and, the LRC provided access to as many, as possible. Most journals are accessed through collections purchased from the American Medical

Association, the American Association for Cancer Research, the American Association for the Advancement of the Sciences, the American Chemical Society, the American Society for Microbiology, Blackwell's Synergy, *BMJ*, Cell Press, EBSCO's Medical and Nursing Collections, Gale, Highwire Press, Kluwer, Lancet, Nature, Ovid, Oxford, *ScienceDirect*, Taylor and Francis, and Wiley. By using Remote Computer Services, a patron can download or print articles at his/her own computer. In addition to the titles available electronically, there are hundreds of titles where library staff can print articles on a pay-per-view basis; *Docurights*, Ingenta, Karger, Sage, and Springer provide this service.

3) ***Databases.*** The LRC's Remote Computer Services offer access to 170 databases and other resources for research and learning. In 2003, the LRC expanded access to the extremely popular *UpToDate* database, to include two years of graduate student publications. Access to such vital medical resources, such as *e-Medicine*, *MD Consult*, *Micromedex*, *PsycInfo*, *MEDLINE*, *CINAHL*, Evidence-Based Medicine Reviews, *HaPI*, and Current Contents, continued throughout 2003. *Tomes Plus* has also been added to the LRC *Micromedex* subscription. The LRC discontinued the *Knowledge Finder* search engine; however, the LRC added *Ovid Medline* and continued the use of *PubMed*. Students prepared for their Medical Boards by using *Exam Master: USMLE Step 1, 2, & 3*. These computer programs simulated the tests that the SOM students would be taking.

Archival Collection for Preserving the University's History. The primary functions of this LRC unit are to preserve, arrange, and describe items of significance to USU history and rare collections. The mission is to preserve and make accessible materials that document the history and unique qualities of USU, as well as, the history of military medicine. With the advice and financial support of senior management, along with **Val Hemming, M.D., Professor and Dean Emeritus, USU School of Medicine,** and the USU SOM Department of Medical History, the LRC continued to make great strides in implementing an archival program for the University. The Archival Collection has received donations from USU faculty members and administrators. These collections provide invaluable historical information on the significant activities of USU, to include USU Faculty Senate minutes and papers, select AFRRI papers, USU Graduation information, and others. A significant collection of papers from the Society of Medical Consultants of the Armed Forces has also been obtained. Holdings currently consist of 70 linear feet of space. Standard archival procedures for organization and storage are employed; documents are stored in acid-free document cases, ensuring their availability for future researchers. Search aids, including the use of specialized computer data bases, will facilitate easy access for future researchers. This unit provided world-wide access to key documents for research, via the Internet.

A Digital Archival Collection. A significant accomplishment of the LRC Archival Collection was the development of a digital archival system. Since 1999, this program has grown into an expanded electronic collection of over 135 historical documents, available through the LRC web site: <*http//www.lrc.usuhs.mil/(select)Military Medicine Historical Documents*>. Historical, military, and medical documents already owned by the LRC are being scanned into Adobe's Portable Document Format (PDF), for universal use. When possible, Optical Character Resolution (OCR) is being used to make the documents fully searchable, in both MacIntosh and Pc formats, while maintaining the page format of the original. This special project includes documents from the Civil War through the Korean War. In addition to historical documents, USU theses and dissertations have been digitized. Theses by the Graduate

School of Nursing students, written since 1998, and recent SOM Graduate Education dissertations and theses in the Biomedical Sciences and Public Health, are included. Any current, or former students, who have written theses or dissertations for USU, are encouraged to submit an electronic format of their work to the LRC, for conversion to PDF format and placement on the web site. Thus, access to the research and findings of USU students will be available and showcased for the World to see. To date, there are over 140 theses and dissertations placed on-line.

The Archival Collection maintains a bibliographic database of the USU faculty publications. The Faculty Publications Database is accessible through the LRC web site: <*http://www.lrc.usuhs.mil/*>. The database is updated weekly and includes information from, as far back as, 1974. Currently, there are more than 13,000 journal and book citations in this database.

National and International Visibility for the LRC. The LRC has expanded its national presence by joining a number of organizations and associations. Membership in *BioMed Central* allows any researcher or student, at USU, to publish an unlimited number of research articles in journals published by *BioMed Central*, without paying any article processing charges. Access to the research published in *BioMed Central* journals is open (freely available at <*www.biomedcentral.com*> and at the National Institutes of Health's electronic repository of full-text articles <*www.pubmedcentral.nih.gov*>. These peer-reviewed journals are available to a global audience.

The LRC joined the Association of Academic Health Sciences Libraries (AAHSL), which is comprised of libraries of accredited United States and Canadian medical schools belonging to the Association of American Medical Colleges (AAMC). The LRC has begun to participate in the *Annual Statistics of Medical School Libraries in the United States and Canada*; it has also continued its membership in the Medical Library Association, the American Library Association, the Special Libraries Association, *FEDLINK*, *OCLC*, and a regional consortium, *Palinet*. And, significantly, the LRC has continued as a full member of the National Network of Libraries of Medicine, which is sponsored and supported by the National Library of Medicine.

Support to Military Medical Libraries and Institutions. The LRC has a program to provide access, for medical and research personnel, to electronic knowledge-based information. This sharing of LRC expertise and computing capabilities enables libraries and groups, which do not have technical staff, to access their own subscriptions, via customized web pages. This program, of assisting others, allowed members of other entities to perform their work better, faster, and more efficiently, because they had access to the most current information from any location with access to the Internet. Registered members of this LRC access program have individual IDs and passwords for accessing the various resources.

In 2003, the LRC greatly expanded the number of resources furnished to the Walter Reed Army Institute of Research (WRAIR) and the United States Army Medical Research and Materiel Command (USAMRMC). Substantial savings were generated for WRAIR, USAMRMC, and USU through the joint purchase of subscriptions. Likewise, USAMRMC and WRAIR began sharing their electronic purchases; thus, a broad base of participants received increased access to electronic books and journal articles. In addition, the Naval Medical Center at Portsmouth, Medical Services from the Department of State,

and Partners for Peace Information Management continued their agreements to allow members the use of Remote Computer Services for accessing their electronic resources. New additions to the program include providing service to DoD Patient Safety Officers and members of the Pentagon Force Protection Agency; the University received some compensation for its participation. Additionally, researchers at numerous facilities were able to improve collaboration with the USU faculty, through common access to these electronic knowledge-based resources. In effect, the LRC is participating, in changing the speed of information delivery, throughout the DoD.

During the past year, a major LRC initiative included the provision of access to electronic resources for the interns and residents throughout the National Capital Consortium (NCC). The NCC residents used the LRC's Remote Computer Services as their entry point to electronic resources. To facilitate this effort, the librarians at the local military teaching hospitals were visited to obtain their participation in this effort. These librarians assisted the NCC residents with initial training and the identification of the multiple services of the LRC. The LRC librarians also participated at various morning conferences to inform the NCC residents of new reference services; e-mails were another form of communication utilized with the NCC program directors, USU off-campus faculty, and residents.

In 2003, the LRC hosted a number of tours for visiting dignitaries including international visitors from Tbilisi, Georgia; Israel; and, Surgeons General from many nations. Members of the Medical Strategic Leadership Program, the new USU Board of Regents, and the leadership from the American Medical Association are a few examples of the distinguished visitors to the LRC.

A Quick Look at LRC's Print and Electronic Resources.

Collections:	
Print Volumes (Book and Journal)	109,210
Electronic Book Titles	289
Print Journals	760
Electronic Full-Text Journals	6,322
Educational Software	65
Electronic Databases	173

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Informatics - An Expanding and Essential Component of Education in the Health Sciences.

Background. Efforts in computer-assisted instruction as a study aid for USU students have been ongoing, since 1979, when a series of medical students developed, in Apple Pascal, the first drill and practice question bank within the SOM. Course directors provided questions entered into the University Board Review System. In succeeding years, several departments (Biochemistry, Pathology, Pharmacology, and Physiology) developed their own on-line examination archives or examination item databases, which have been well received by the students. Over time, this type of material was delivered to students first on stand-alone computers, then on networked computers (*HyperPharm*, *HyperRenal*, and others) and most recently as world-wide-web (WWW) based sites accessible both inside and outside of the University by students in the SOM Departments of Biochemistry, Pathology, Pediatrics, Pharmacology, and Physiology and the GSN students majoring in Nurse Anesthesia and Nurse Practitioner. One of the most ambitious of these efforts has been the Biochemistry question database of examination questions for testing, which was developed between 1991 and 1996. This archive is available at <*http://bob.usuhs.mil/biochem/exams/exams-f.html*>.

Innovative Web-Based Study Aids, Teleconferencing Sessions, Exercises, and Course Administration. Image-based study aids have been developed by the USU faculty. The earliest of these efforts were Radiological Anatomy, Neuroanatomy, and Chest Film Review laser disc programs developed and deployed, between 1985 to 1995, by the Department of Radiology and Radiological Sciences. In 1996 and 1997, this material was also made available to students as CD-ROMs; and, in 1997, the material was migrated on the WWW at <*http://rad.usuhs.mil/rad/edu/edu.htm*>. The Department of Radiology and Radiological Sciences has established collaborative efforts with faculty at the Mayo Clinic Foundation and Emory University, which provide USU medical students access to the Visible Human data set. Both SOM and GSN students utilize this resource. Another current effort encourages the students to draw correlates between anatomy, physical diagnosis, clinical neurology, and radiology.

Currently, USU uses interactive, real-time video teleconferencing to link five different sites for its six-week clerkship in Obstetrics and Gynecology. In sessions that last from 60 to 150 minutes, site coordinators meet with the clerkship directors and administrative personnel to discuss such crucial issues as curricula, student problems and evaluation, and faculty development. Since the sessions began, in May of 1998, USU has found that the sessions enable the standardization of curricula, facilitate the sharing of ideas, reduce administrative tasks through centralized support, and improve the meaning, consistency, and level of detail in student evaluations. (*See Section II, Third-Year Curriculum for additional information.*)

The Physiology Course (Graduate Education and SOM first-year students) provides an acid/base game in which students diagnose an acid/base disorder from patient data on a Davenport diagram, treat the disorder, and see what the treatment does to the patient. Other exercises include body fluid compartments and Yannet-Darrrow diagrams, and the control of glomerular filtration, Tm and the countercurrent mechanism. These exercises are treated as a regular laboratory in the course. The Pharmacology Course (Graduate Education, GSN, and SOM second-year students) has included a computer-based pharmacokinetics simulation exercise and a computer-based drug information exercise,

as integral parts of the course for the last 16 and 11 years, respectively. These exercises, designed by USU faculty, are conducted individually by students or in small groups in the Learning Resource Center (Nurse Anesthesia, Graduate Education, and SOM second-year students).

Over the past six years, on-line quizzes and formal examinations have become more widely used by both the SOM and the GSN. One of the first, routine on-line quiz at USU was introduced, during 1999-2000, in the Department of Medicine's (MED) Clinical Concepts Course. Subsequently, similar quiz material was introduced in MED's Introduction to Clinical Medicine, Biomedical Infomatics, Radiology and Radiological Sciences, and the Health Service Administration Division of Preventive Medicine and Biometrics Courses. The GSN Pharmacology Course for Nurse Anesthesia students introduced formal examinations as an on-line exercise, during the 2000-2001 Academic Year. This effort continued, during 2003, and was expanded to other GSN courses. The GSN intends to move most formal examinations to an on-line format; ***the SOM Department of Pathology completed a conversion from paper-based formal examinations to on-line examinations, during 2004***.

The USU SOM Department of Medicine has introduced a widely used innovation in course administration. *CWebLog* is a WWW-based database for logging students' clinical experiences, during the medicine clerkships. As students submit data, they may be presented with a set of reviewed links related to the type of case they are reporting. Student entries are stored in an SQL database that is used to produce browser-based reports on any combination of clerkship experiences. A preliminary description of this project has been published and is described at: <*http://cweblog.usuhs.mil*>. Over subsequent years, all of the seven SOM clerkships have adopted *CWebLog* as one means of recording student experiences in the clinic. The project was expanded to include the collection with PDAs (the Portable Digital Assistant (PDA) Initiative is discussed under *The Department of Biomedical Informatics*, which follows in this section). Data from these devices is synchronized to the same SQL database as is data from personal computers and a web browser. The GSN Nurse Practitioner faculty use a similar WWW or Portable Digital Assistant (PDA)-based system and the GSN Nurse Anesthesia faculty utilize data collection in a spreadsheet format aggregated in their department's office.

MedPix, An Internet Teaching File for the Health Sciences. The USU *MedPix System* was developed to offer medical students, researchers, and clinicians a descriptive on-line database housing medical case examples. The database provides a fully-functional archive of clinical photographs and radiologic images, primarily of abnormal and disease conditions. Today, there is a shared Internet teaching file filled with a variety of illustrated medical cases available to anyone interested in learning more about an affliction or in sharing information and images from cases they have seen. These cases are further complemented with posted summaries, reports and editorial comments. **James Smirniotopoulos, M.D., Professor and Chair, SOM Department of Radiology and Radiological Sciences**, and third-year medical student **Ensign Henry Irvine** originated the USU program as a text-only database with aspirations to develop it into a multi-level program. Instead of using only static web pages, it was decided to use a database and dynamically generated pages. The intention was to allow its users, at remote sites, the ability to add images and cases into the database. The site began with a Radiology intent and has since branched off into the Dermatology and Pathology disciplines. Visitors to the site can also practice identifying ailments by selecting a *hide-text* feature. This allows the user the opportunity to take a self-quiz before the introduction to the actual illness. It is now an impressive site in terms of complexity and depth of resources. *MedPix* is also recognized as a powerful teaching tool for residents.

By 2001, Radiology residents were using *MedPix* data for teaching files at such hospitals as the Tripler Army Medical Center, the Naval Medical Center at San Diego, and throughout the National Capital Region. Continuing through 2003, Doctor Smirniotopoulos' Distance Learning Program has provided monthly Neuroradiology Teleconferencing between USU and the Naval Medical Center in San Diego, California. In addition, Doctor Smirniotopoulos has received approval for providing on-line continuing medical education (CME) and continuing nursing education (CNE) through his *MedPix Radiology Teaching File*; the program provides one hour of Category 1 CME or 1.2 hours of CNE for every four *MedPIx* cases. The *MedPix Database* currently supports all of the DoD Diagnostic Radiology Residency Programs by administering and hosting commonly shared files. *MedPix* has over 7,000 registered users, although registration is not required for simple case review. During 2003, the MedPix database was upgraded to include a secure web server for log-in and user administration. *MedPix* has delivered more than 11,206,663 pages since September 3, 2000; and, it is the longest running *Case of the Week* program in the world. Doctor Smirniotopoulos has also begun a *Teach the Teachers* project, sponsored by an educational grant from the Radiological Society of North America (RSNA) to train 6-8 African Radiologists in Tropical Imaging. This competitively chosen group will spend seven weeks at USU in classroom, small group, and independent study. The radiologists will then return to their home countries to share their experiences at USU.

Compact Disc Provides Cost-Effective Assistance. The Department of Pathology has digitized its entire 2x2 slide collection, some 1,300 images, used in the MS-II Pathology Course; the images are available to students via the WWW. The Pathology Department has developed a compact disc of approximately 1,000 photographic images of pathological specimens. Directed to second-year medical students, the compact disc provides assistance for preparing for pathology laboratories and examinations; the disc provides a comprehensive collection of images covering all major organ systems. The department finds that the compact disc increases the accessibility of images to students and results in significant financial savings, because duplication costs for lost or damaged 2x2 slides are eliminated. In addition to the image data bank, this WWW site archives old examinations and the SOM Pathology Laboratory Manual, and administers 14 quizzes to students during the course. Each year, USU students access the 14 on-line quizzes, which use photographic images, answer the quiz questions in an open book format, and submit their answers electronically to the department. A data bank of questions written by USU faculty are archived by computers and used in testing medical students. The use of archived questions allows the department to compare class performance from year to year and to evaluate the quality of the questions, which has reduced ambiguity in examinations. (The Department of Anatomy, Physiology, and Genetics (APG) has also digitized large portions of its 2x2 histology collections.) These digital collections are available to students on and off campus. The Department of Pathology uses Internet technology to provide a web page independent of the University's web site. This page enables students to access information regarding Pathology's educational activities, links them with other medical schools and pathology web sites, informs the public of USU departmental personnel and research activities, and advertises the department's Ph.D. Program in Pathology. In recognition of the need for the deployed military physician to have access to Continuing Medical Education (CME), the Pathology Department has also used computer technology to provide CME credit to these physicians. Through this web page, uniformed physicians could review cases written by the pathology faculty, answer a series of questions based on the specific case, and receive CME credit. More than 300 CME certificates have been issued by USU for this activity.

eMedicine.com - USU Faculty Help to Revolutionize Medical Textbook Publishing. During 2001, two USU department chairs and many other USU faculty played key roles in a publishing breakthrough that has redefined the way today's health care professionals can obtain timely and critical medical information (a skill which is essential to the medical students' future practice). This publishing breakthrough is called *eMedicine.com*; and, its impact is worldwide. *eMedicine.com*, the medical education network that has developed the first and largest on-line, peer-reviewed medical reference library, is available to the entire world, free of charge, assuming Internet access. It consists of 59 on-line reference books covering every medical specialty. Radiographic images, photographs, audio and video clips relevant to each topic are incorporated. Each chapter features 1.5 hours of Category I American Medical Association (AMA) Physician's Recognition Award continuing medical education (CME) credit. There are an estimated 15,000 hours of CME credit. Authors and medical editors are volunteers and are not compensated in any way for their efforts. There is significant supervision of content, with several layers of medical and copy editors to assure accuracy and quality. Unlike traditional textbooks, which can be as much as six years out of date at the time of publication, the information in the *eMedicine.com* chapters is updated 24 hours a day, 365 days per year. If an important new study is published in a journal, the research is immediately included in the on-line textbook. The United States military is the largest user of the site to date. There are at least five million users per year, and that figure is rapidly increasing every six months. **Leonard Sperling, COL, MC, USA, Professor and Chair, USU SOM Department of Dermatology**, is one of the editors and authors of the Dermatology Textbook on *eMedicine.com*. And, **James G. Smirniotopoulos, M.D., Professor and Chair, USU SOM Department of Radiology and Radiological Sciences**, is one of the editors-in-chief of the Radiology Textbook on *eMedicine.com*. Many other USU faculty members also contribute to this web site.

Virtual Reality-Based Environment for Teaching Clinical Anatomy. *Anatomic VisualizeR* is a virtual reality (VR)-based environment for teaching and learning clinical anatomy, which was initially developed by the University of California, San Diego (UCSD). Educational applications of *Anatomic VisualizeR* have been jointly explored by UCSD and USU. *Anatomic VisualizeR* made its curricular debut outside of UCSD, in 1999, when it was used for teaching two graduate-level nursing Neuroscience lectures; USU was the first school approved to use *Anatomic VisualizeR* outside of the UCSD. The two universities have jointly developed six new lessons. The application is utilized by both the GSN (Neuroscience and Pathophysiology) and the SOM (Introduction to Structure and Function). *Anatomic VisualizeR* provides a virtual dissection room in which students and faculty can directly interact with three-dimensional models and concurrently access supporting curricular materials. A broad range of virtual exploratory tools enables users to investigate structures in ways not possible in the real world.

The USU Clinical Simulator, Patient Simulator Laboratory, and SIMCEN Present Scenarios Applicable to Combat Casualty Care, Anesthesia, Critical Care, Trauma, and Emergency Medicine. During 1997, the USU Departments of Anesthesiology and Anatomy, Physiology and Genetics (APG), in collaboration with the National Naval Medical Center's Department of Anesthesiology, developed the Clinical Simulator and Patient Simulator Laboratory (PSL) located in the USU Department of Anesthesiology. The PSL has evolved into a fully interactive clinical training laboratory, equipped as an operating room with standard monitoring equipment, instruments, life support system, defibrillator, and complete audio/video recording equipment. This instructional facility supports training in combat casualty care, anesthesia, critical care, trauma, and emergency medicine. Students gain experience in

recognizing problems, developing decision-making skills, and refining techniques and procedures. ***During 2003, the PSL provided over 600 hours of University-wide support for course offerings***. Throughout the past year, numerous groups of students and medical personnel made regular use of the PSL both as a training facility and as a research resource: 1) **USU First-Year Medical Students - Cardiovascular Physiology.** During the last six academic years, the PSL has been used as an integral part of the Physiology Course with the entire class of graduate and medical students rotating, in groups of eight, through a cardiovascular simulation. For these students, the simulator is used to complement a teaching laboratory that demonstrates the basic interactions of heart rate, blood pressure, cardiac output, stroke volume, and circulatory resistance; 2) **USU Second-Year Medical Students - Pharmacology Lectures Bring the Hospital to the Students.** In addition, the PSL provides live, interactive distance education presentations to the second-year SOM students for illustrating simulated, clinical examples, during their Pharmacology lectures; thus, bringing the hospital to the students through a newly installed Advanced Distance Education Network (*ADEN*) designed by the PSL staff; 3) **USU Third-Year Medical Students - Two-Week Anesthesiology Rotation.** The simulator helps these students to learn the fundamentals of anesthesia; they practice connecting a patient to external life support sources, such as an oxygen mask, a ventilator, or manual ventilation via endotracheal intubation. USU medical students combine the lessons learned about the physiology of gas exchange and physiologic and pharmacologic responses, while actually performing the procedures and administering anesthesia on the patient simulator, without putting a patient, or themselves, at risk; 4) **USU Graduate Students in Nurse Anesthesia in the MSN Degree Program.** USU Graduate School of Nursing (GSN) students undergo basic and advanced simulator training, during which they must handle unique cases with unexpected complications. In the Basic Principles of Anesthesia Course, GSN students use the simulator to practice airway management, interpret EKG patterns, practice line placement, and begin learning anesthesia induction; during the next semester, the simulator is used to expand on these basic skills. Some nurse anesthesia students use the simulator as a laboratory instrument for their required Master Degree Thesis Project; 5) **Walter Reed Army Medical Center (WRAMC) Nurses - ICU Certificate Program.** These nurses are exposed to advanced patient care scenarios that include extensive equipment use and critical medical situation training; 6) **Uniformed Anesthesia Residents from Military Centers in the National Capital Region.** These resident physicians are challenged with complex, specifically-tailored medical scenarios, designed to prepare them for dealing with critical, time-sensitive situations. For example, recent, incoming classes of anesthesia residents from WRAMC were given an extensive trauma training/evaluation with the simulator. When the GSN became concerned that its students were not prepared to deliver anesthesia under austere conditions, because they rarely had an opportunity to work with Field Anesthesia Medicine, the GSN Nurse Anesthesia faculty developed a CD-ROM on field anesthesia, which is now a required part of the GSN Anesthesia curriculum; 7) **Collaborative Efforts with the R. Adams Cowley Shock Trauma Center of Baltimore, Maryland.** In this area, the simulator is used as a test device to evaluate how experienced Emergency Room personnel can respond during critical medical emergencies; 8) **USAF Critical Care Air Transport Teams.** Once a month, USU hosts an Air Force Critical Care Air Transport Team (CCATT) session, during which the three-person team treats the simulator as a real case. Practicing nurses, physicians, and respiratory therapists are involved in the CCATT training scenarios. They receive a call that their services are required, gather their gear, leave their hospital (Malcolm Grow Medical Center), travel to the site of the patient (USU PSL), evaluate the patient's condition, and provide sufficient treatment to ensure successful transport of the patient back to a hospital. Once they leave the hospital, they can use only equipment and supplies that they brought with them.

The patient simulator, featured at: <*www.usuhs.mil/psl/*>, offers many benefits to students and instructors. Without putting a life at risk, students can experience handling rare conditions such as malignant hyperthermia, learn to recognize a wide variety of problems, practice using instruments and equipment, develop decision-making skills, and accumulate first-hand experience with military-specific problems like combat trauma. Instructors can tailor each case to individual students, selecting the type, level of speed, and degree of severity according to the student's level of competence. If the instructor wants to give feedback or additional directions, the lesson can be paused and repeated as many times as necessary. Sessions are recorded and played back, enabling the students, with the instructors, to analyze their performance and to recognize their strengths and weaknesses. Because no life is at stake, instructors can purposely push students beyond their competency levels so they can learn and retain critical lessons. The patient simulator is a valuable addition to the USU curricula, one that will play an expanded role in the future; only a small percentage of the 125 United States Medical Schools have patient simulators. Offering the single simulator in the PSL to teach a class size of more than 165 students requires complex scheduling. During 2000, collaboration between the PSL, the Simulation Center (SIMCEN) at Forest Glen, and the patient simulation facility at the Naval School of Health Sciences (located on the NNMC base) now provides access to a total of 12 mannequins that span the range of ages from newborn to adult, both male and female (four at the USU Military Medical Simulation Center (SIMCEN); two at the Naval Medical Education Training Command, located at the National Naval Medical Center; and, six mannequins at the PSL).

The National Library of Medicine and the USU *Internet2* Link for Distance Education. During 2003, the *Internet2* link provided by the National Library of Medicine (NLM) to USU has continued to serve as an invaluable component, in the on-going USU activities for leveraging the power of its simulation-based education programs, in order to reach large numbers of students via its distance education system. ***Live, two-way sessions are now sent between the USU PSL and:*** the USU Lecture Hall E for the first-year medical students; USU Lecture Hall D for the second-year medical students; the National Naval Medical Center/Naval Medical Education Training Command (NMETC) Simulation Facility; the Armed Forces Institute of Pathology (AFIP) Medical Museum in Washington, D.C.; and, St. Francis University located in Loretto, Pennsylvania. Within the past two years, the USU Patient Simulation Laboratory has acquired $125,000 in extramural funding for *GigE Network Gear* to extend the NLM-provided *Internet2*, throughout the USU campus and the National Naval Medical Center (NNMC); the PSL is utilizing a $240,000 clinical distant educational grant that will establish the *Internet2* links between USU, NNMC, NLM, AFIP, and the Walter Reed Army Medical Center as a test-case for world-wide telemedicine training and treatment for the DoD clinical community.

A Multi-Disciplinary Approach for Teaching Responses to Weapons of Mass Destruction and Terrorism. Beginning in 2000 and throughout 2003, the USU Patient Simulation Laboratory has provided educational experiences for both clinicians and emergency operations personnel in Weapons of Mass Destruction and Terrorist (WMD/T) scenarios, during a USU SOM Course, ***The Scientific, Domestic and International Policy Challenges of Weapons of Mass Destruction and Terror***. The Course on WMD/T generally includes two modules: *Part I, The Emerging Threat of Biological Weapons and Bioterrorism*; and, *Part II, Nuclear, Radiological, High Explosives, Chemical Agents, and Unusual Weapons*. Simulated scenarios have been designed through the cooperation of experts in bioterrorism, chemical warfare, medical effects of radiation, and trauma. Students who take this course include senior

military officers, physicians, nurses, lawyers, career politicians, administrators, and logistic personnel. Part I culminates in extensive simulated crisis events including inhalational anthrax, pneumonic plague, marine toxins, and other biological agents. Part II culminates in an intense simulated crisis event involving the terrorist use of chemical, radiological and explosive devices. Non-clinical students, functioning as staff in emergency operation commands, embassies, and/or hospital response centers, manage conflicting information from on-scene observers, other agencies, and media resources. Clinical students, functioning as staff in an emergency room, provide direct care of multiple patients presented by both mannequin-based simulators and human actors. Debriefing entails discussions about performance in: leadership and followership skills; team performance and dynamics; communication skills; data management; logistic support; resource allocation; emergency declaration; assessment and reevaluation of situation(s); medical triage; medical diagnosis; medical treatment; containment of outbreak(s) or agent(s); and, appropriate notification of other officials. These simulated presentations have received overwhelming approval from the participants as documented in the students' course critiques. Course instructors have requested continuation of past presentations as well as new scenarios. Crisis Management following a WMD/T attack can be taught using patient simulation as the foundation for the event; and, multi-disciplinary input has resulted in simulated events which are overwhelmingly accepted by students. This experience allows personnel who will fill positions involving the management of a WMD/T attack to have their *first time for real* through a simulated educational event. *(The PSL is discussed in further detail in Section II, MILITARY UNIQUE CURRICULUM.)*

Virtual Reality Telepresence Surgery System. The USU virtual reality Telepresence Surgery System (*TeSS*) has gained recognition as an exciting technology training tool. Faculty members in the USU SOM Department of Surgery have been working with the system, since July of 1997. Wearing three-dimensional glasses, students place their hands on a surgical instrument. Peering into a video screen, students at the National Capital Area Medical Simulation Center' (SIMCEN) are able to *touch*, *tug*, *cut*, or *sew* the tissue displayed on the screen; they actually *feel* the movement. The reach-in display table issues a report on how well the student performs, during the procedure. The USU Division of Ophthalmology has coordinated with the Surgical Director at the SIMCEN, who is also a member of the USU SOM Department of Surgery, to enhance the surgeon further with this technology. The new addition to the *TeSS* system allows a magnified view of the eye, and scales down the hand motions of the surgeon from the magnified view and motions to the real microscopic motions in placing sutures accurately. In addition, tremor is dampened out of the system. *Thus, the surgeon's hands are now smaller and steadier and the surgeon's vision is improved to microscopic levels.*

Establishment of a Center for Informatics in Medicine. Biomedical data and the field of informatics continue to rapidly expand. Processes of knowledge retrieval and decision-making are critical to the future health care provider. In light of technology's role in knowledge development, biomedical informatics has become an essential component of education in the Health Sciences. Following graduation, health care professionals must be able to use biomedical information to define, study, and solve problems.

In 1996, decisions were made to establish a USU Center for Informatics in Medicine to be placed under the Vice President for Teaching and Research Support (TRS) as an interim step toward the creation of an academic Department of Biomedical Informatics. From 1997 through 1999, a coalition of CIM, the LRC, and the appropriate Dean's Office (SOM or GSN), initiated steps to prepare incoming

USU students for the expanded role of informatics in their studies and professional careers. It was recognized that if students are to fulfill the five key roles of health care providers - *lifelong learner*, *clinician*, *educator/communicator*, *researcher*, and *manager* - they must have the benefits of a dedicated biomedical informatics program. The Center for Informatics in Medicine has enhanced USU informatics research and education through introductory computer courses, a workshop on Internet applications in diagnostic pathology, and the development of such diverse areas as web sites on educational technology, military graduate education, and HIV in the military. During 2003, the Center continued to provide computer orientation courses for faculty and students. ***The Center maintains over 100 educational web sites for the University; these sites serve on-campus and distance students, residents, and faculty***. Highlighted sites include Telegenetics and the University's on-line student assessment of instruction (for both the SOM and the GSN). Also provided are self-assessment, surveys, quizzes, and major course examination sites for the following selected examples of USU activities: the Faculty Senate; the GSN VA/DoD Distance Learning Program; the GSN Nurse Anesthesia and Family Nurse Practitioner options in the GSN MSN Program; and, the SOM Departments of: Anatomy, Physiology and Genetics; Medicine; Pathology; Pediatrics; Pharmacology; Preventive Medicine and Biometrics; and, Radiology and Radiological Sciences. CIM continues to have responsibility for video teleconferencing interface at USU; support has been provided to the GSN VA/DoD Nurse Practitioner Program (six sites); the SOM Department of Obstetrics and Gynecology Clerkship Coordinators Meeting (three to five sites); the 8th NASA Medical Topics: Occupational/Environmental Health and Safety Primer and Issues Series; and, a video teleconference between the SOM Department of Pediatrics and Rota, Spain, on a repeating basis.

> **Informatics Education. The doctor is the most highly trained individual in the health care system, and as such it is the doctor who should be the final judge of the data entered into the electronic medical record. If the medical record is also a research tool, then this gives a new responsibility and value added to the physician. Educating medical students to do this well is a major challenge. Students who are not exposed to this type of thinking and practical training in medical school will be at a disadvantage when it becomes the norm, as it surely will.**
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> \- Journal of Investigative Medicine, Volume 46, No. 8, October 1998, page 345.

The Department of Biomedical Informatics. In June of 1998, the Dean, SOM, appointed a committee to assist in creating the Department of Biomedical Informatics; during 1999, the USU Board of Regents approved the creation of the new academic department. The SOM's Department of Biomedical Informatics (BID) is recognized as a basic science department with three areas of specialization: bioinformatics, medical informatics, and education. It serves as a resource center to extend and enhance already strong curricula through departmental and interdisciplinary courses that: integrate basic sciences with clinical experiences; offer simulated clinical training experiences; continue current teaching efforts in introductory computing; and, focus on student-centered learning through case-based, small-group sessions. It also serves as a clearinghouse for USU informatics applications and provides a testing facility for informatics research. The department helps to ensure that all USU graduates have a foundation in informatics that will support them, as career professionals, in the Military Health System. Specifically, the charter for BID includes the following: 1) support for the curricula

through educational technology; 2) extension of the curricula through biomedical informatics; and, 3) identification and research of innovative informatics applications for military health care.

Since 2000, the Department of Biomedical Informatics (BID) has been charged to act as a resource center to *support* and *extend* the USU medical curriculum and to act as a *focus* for developmental and research activities in informatics. The university-wide operation of the Center for Informatics in Medicine has been retained as the department's service-based component. Research computing will eventually be reassigned to the Department of Biomedical Informatics and it will no longer be considered a part of the Information Services Management Center (UIS). The Department of Biomedical Informatics serves as the focal point for USU's academic computing support, spear-heading such activities as sequence analysis, statistical computing, and the student web page pilot project. It also solves problems associated with the University's widely dispersed informatics initiatives. In the past, attempts to incorporate informatics into USU curricula had been handled by individual departments, leaving the efforts vulnerable to collapse if a key member of the department left or was reassigned. The Department of Biomedical Informatics now serves as a central resource into which all departmental informatics endeavors can be incorporated. Resources for this department will be gradually increased in accordance with the requirements of the SOM and the Military Health System.

Two projects supported by BID, during 2000 and 2001, involved innovative education applications for military health care. A collaboration with the University of California at San Diego (UCSD) brought the National Library of Medicine's Visual Human to the USU campus as part of an application developed at UCSD - *Anatomic VisualizeR*. This 3-D visualization tool for the Visible Human Data Set uses a high end Silicon Graphics workstation for stereoscopic rendering of the data set. Currently, this collaboration has developed five lessons specifically for the SOM and the GSN Anatomy Courses. In August of 2000, the Dean of the SOM charged the Department of Biomedical Informatics to implement a USU Medical Portable Digital Assistant (PDA) Initiative. A working group of students, staff, and faculty devised a staged working plan to deploy the PDA to include: distribution and introduction of the PDA to the SOM students; usage training; communication deployment at USU; communication deployment to the Military Treatment Facilities (MTFs); and, evaluation and refinement of the initiative. The PDA devices were provided to the USU second-year medical students, in December of 2000. Studies have confirmed that physicians and medical students are able to successfully incorporate PDAs into their patient care workflow. With the use of a drug information database, clinicians save time, improve knowledge for themselves and their patients, and possibly decrease preventable adverse drug effects. The goal of the USU Medical PDA Initiative is the integration of this technology into the clinical setting. The objectives of the USU PDA Initiative follow: 1) communication while students are at clinical sites (HandDBase and associated databases); 2) clinical encounter log collection (*CWebLog* developed within the USU Departments of Biomedical Informatics and Medicine); 3) clinical reference material access (*qRx(ePocrates*) and 5-Minute Clinical Consult; and, 4) clinical calculator availability (*MedMath*). USU students are responsible for installing five applications and the *CWebLog* channel on their PDAs. During their clerkships, each student is expected to operationally maintain his or her PDA. The PDA serves as a significant option that the USU students have for maintaining a log of their clinical encounters. During 2001, this educational tool was determined to be a complete success and that distribution would be continued in the future. During 2003, the Department continued its support for the PDA Initiative. ***To date, Personal Digital Assistants have been issued to three classes of SOM and Graduate School of Nursing (GSN) students.*** The USU PDA Initiative was highlighted at the Symposium of the American Medical Informatics Association; and, the resulting paper, *The USU Medical PDA Initiative: The PDA*

as an Educational Tool, was submitted and published in the Journal of the American Medical Informatics Association, in November of 2002.

As mentioned above, during 2003, BID was responsible for the Clinical *CWebLog* (at <*http://cweblog.usuhs.mil/*>), which is used by USU SOM students to document their experiences during their clinical rotations; *CWebLog* is currently used by the seven third-year clerkships with access through a web browser and the PDAs issued to the SOM and GSN students. Also, during 2003, the Department established its second course, BID-510, Introduction to the Department, which organizes and teaches *MCB-501, Introduction to Computers for Bioinformatics Computer Skills* (established during 2002, with assistance from faculty and staff in the SOM Department of Preventive Medicine and Biometrics and the Learning Resource Center). The new course will be offered, during the 2004 Academic Year. BID also continues to support the implementation of a high performance research network at USU (*Internet2*). Due to an operational connection to *Internet2*, through the National Library of Medicine, BID hosted demonstrations from USU laboratories, during 2003.

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National Capital Area Medical Simulation Center.

Just as the military has remained a driving force behind the evolution of flight simulation, the Uniformed Services University of the Health Sciences (USUHS) National Capital Area Medical Simulation Center, with its mission to establish a world-class, cutting-edge medical education facility, is definitively ahead of the curve in terms of the utilization of simulation to enhance medical education and readiness. The Center pushes medical simulation into the 21st Century.

- Military Medical Technology, *Locating the Cutting Edge*, Volume 5, Issue 5, 2001, page 32.

Background. In response to new technologies and increasing requirements for standardization in clinical assessment skills, coupled with a diminishing inpatient teaching base, United States medical educators have developed a variety of new training and testing tools (trauma and anesthesia simulators, interactive computer-based testing (CBT), distance learning, virtual reality applications, and clinical simulations using "standardized patient" actors (SPs). All of these innovations are being rapidly implemented throughout the United States and are being incorporated as new quality standards for medical education and testing. For example, the National Board of Medical Examiners scheduled the implementation of CBT in the United States Medical Licensing Examination (USMLE) for 1999; and, clinical testing utilizing standardized patients will be implemented as part of the USMLE Step 2 by 2005. Similar requirements are being discussed by the accrediting entities for advanced practice nurses.

These innovations in medical education conform to the 1995 DoD Medical Readiness Strategic Plan, which states: *The use of modern technological advances such as computer simulations and virtual reality has the potential to provide realistic training in battlefield techniques and procedures, and should be pursued to enhance medical readiness training*. In July of 1995, the Dean of the USU School of Medicine, and the Commander of the Walter Reed Army Medical Center (WRAMC) established a committee to plan for a model military medical simulation center for the: 1) development and use of military medicine databases for education and training; 2) simulation, teaching, and measurement of patient interviewing, physical examinations, and diagnostic skills; 3) instruction, assessment, and documentation of readiness skills; and, 4) focused pre-deployment training. The Associate Dean for Clinical Affairs, SOM, was appointed chair of the planning committee and designated to coordinate the project for the University.

Upon the determination of space and personnel requirements by the planning committee, a building on the WRAMC Annex at Forest Glen, Maryland, was identified and approved by the Commander of WRAMC as the location for the center. An initial design study, funded jointly by USU and WRAMC, was completed in September of 1996. In 1997, the concept was briefed to the Assistant Secretary of Defense for Health Affairs and the Surgeons General, during a meeting of the TRICARE Readiness Executive Committee (TREC), who referred it to the Defense Medical Readiness Training and Education Council (DMRTEC). Following a briefing on September 25, 1997, the DMRTEC approved the concept and recommended that USU program for funding. In 1998, the President of USU allocated funds for the renovation of the Forest Glen space and the purchase of equipment. The one hundred percent design

was completed on August 12, 1998. Funds for renovation, furniture, and security were obligated on September 30, 1998. Program development and the hiring of staff began late, in Fiscal Year 1998, and continued, throughout Fiscal Years 1999 and 2000. The construction, required for renovation, was completed, during 1999; in October of 1999, the simulation center began training and testing military physicians, nurses, and medical students. On April 21, 2000, the 11,000 square foot National Capital Area Medical Simulation Center (SIMCEN) was officially opened at the Walter Reed Army Medical Center Annex in Forest Glen, Maryland. ***The SIMCEN is the first single location to integrate the use of virtual-reality technology, computer-controlled mannequins, needle insertion simulators, interactive software applications and human simulated patients under one roof to undertake comprehensive medical educational scenarios***.

Educational Activities. During 2003, the SIMCEN was instrumental in introducing medical simulation technology in support of numerous and distinct medical education programs. ***Since October of 1999, the SIMCEN has supported 60 distinct educational activities: 18 - School of Medicine; 11 - Graduate School of Nursing; 15 - Graduate Medical Education; 9 - Operational Medicine; and, 7 - Research Training activities. These educational activities, in turn, supported over 19,698 student encounters with medical simulation.*** It is now estimated that each USU SOM student will utilize the medical simulation center on an average of 26 times, during the four years of medical school education (this number of encounters could well be *the gold standard* for student simulation encounters for all United States medical schools). At present, the SIMCEN expects to support a similar number of programs and student encounters, during 2004.

Since its establishment, the SIMCEN has conducted over 467 tours (51 foreign nations; 103 educational institutions - most of the Nation's 126 medical schools have already visited the SIMCEN; and, over 313 visits from military, professional, congressional, and private organizations). ***To date, the SIMCEN is currently serving as a template for more than 45 educational institutions that are attempting to employ similar simulation technology into their own medical education programs***. As an example of the growing reputation of the SIMCEN, on February 21, 2001, the USU SIMCEN was included in the Discovery Channel Series, *The Nature of Things*. The segment of the program featuring the SIMCEN was entitled, *Surgeons of the Future*. To date, reports of the SIMCEN's activities and simulation capabilities have led to reports in newspapers and professional journals and in national television programs; some examples include: *The New York Times*; *GeoWissen*; *U.S. Medicine*; *Institute for Electrical and Electronic Engineers*; *American Forces Information Services*; *Military Medical Technology*; *Sea Power*; *Stripe*; *USU Quarterly*; and, television reports in: *Fox News*: *NBC Nightly News*; *The Discovery Channel*; and, *The Canadian Broadcasting Corporation*.

Multi-Simulation Techniques Under One Roof. While an increasing amount of professional health care training uses simulation techniques, the SIMCEN is unique among the limited simulation centers found at civilian medical schools, in the United States, because five state-of-the-art teaching components are included under one roof: 1) standardized patients (*patient actors*); 2) multi-media, interactive, clinical case presentations on LAN or web-based CD-ROMS; 3) virtual reality software applications; 4) medical simulators (computerized mannequin simulators and other medical simulators); and, 5) video-teleconferencing/distance education. It uses technology and actors posing as patients to teach students about situations that they may encounter as practitioners, but might not otherwise

experience while training in hospital wards. It also allows for a safe transition between simulations in the classroom and real-life situations in the clinic for learning procedural and surgical skills, and for the interaction with patients in sensitive or difficult situations. Another use of the SIMCEN is the instruction of readiness skills and focused pre-deployment training for wartime, peacekeeping, and humanitarian missions.

The SIMCEN is divided into four functional areas: the Administrative Area; the Clinical Skills Teaching and Assessment Laboratory; the Computer Laboratory; and, the Surgical Simulation Laboratory. Each distinct area can sustain educational activities on its own; and, when necessary, integrate the operations of the entire SIMCEN for a more comprehensive approach. All of the functional areas have been designed to maximize students' access to clinical experience in a state-of-the-art learning environment. The SIMCEN's current research activities include validating the educational efficacy of cutting-edge simulation technology. Some examples of the specialized simulation equipment currently being used include: 1) CathSim AccuTouch: Immersion Medical; 2) Vascular Anastomosis Simulator: Boston Dynamics, Inc.; 3) Bronchoscopy Simulator: Immersion Medical; 4) Laparoscopy Simulator: Immersion Medical/Surgical Science; 5) Ultrasound Simulator: MedSimEagle; 6) Human Patient Simulators: MedSimEagle; 7) SimMan Patient Simulator: Laerdal/Medical Plastics Laboratory; 8) Hand-Immersive Workstation: Cie-Med; 9) Head Mounted Display; 10) People-Shop Software: Boston Dynamics, Inc.; 11) Emergency Care Simulator: Medical Education Technologies, Inc.; 12) Diagnostic Peritoneal Lavage Simulator: Immersion Medical/USU/SIMCEN; 13) Pericardiocentesis Simulator: Immersion Medical/USU/SIMCEN; and, 14) Cricothyroidotomy Simulator: Reach-In, Inc./ USU/SIMCEN. (*The last three simulators have been developed by the USU staff at the SIMCEN.*)

The Administrative Area. The Administrative Area serves as the hub for the SIMCEN; the area includes both the administrative offices as well as the Video Teleconference (VTC) Room. In addition to daily operational activities such as personnel, budgeting, and resource allocation, the Administrative Area houses the offices of the SIMCEN Director, the Director of Administration/Computer Laboratory, the Director of the Clinical Teaching and Assessment Laboratory, and the Secretary. The VTC Room is the SIMCEN's audio/video entry and exit point to the outside world. ***Equipped with state-of-the-art video teleconferencing equipment, any of the video signals, throughout the SIMCEN, can be routed through the VTC Room and sent to any connected site in the world.*** This capability allows individuals at remote sites to participate and to review many of the exercises that take place in the SIMCEN. The VTC Room is equipped with a *telecommuting* conference table, which allows up to twelve students, faculty, or visitors to connect their computer laptops to twelve local area network ports for high-speed Internet access. The table is also outfitted with sixteen headphone ports, allowing various audio exercises, which permit instructors and students to simultaneously utilize the same audio files for review and discussion. As a standard conference room, it is also equipped with a slide-to-video converter, document camera, and VCR.

The Clinical Skills Teaching and Assessment Laboratory. The Clinical Skills Teaching and Assessment Laboratory (CSTAL) is designed for teaching and evaluating students in the basic clinical skills of history-taking, physical examination, communication, and interpersonal skills. Here, ***encounters with simulated patients provide an ideal transition from the classroom to real patient contact. The CSTAL also prepares medical students for the United States Medical Licensing Examination (USMLE)***.

The area is comprised of four sub-sections: the Orientation Room; the Clinical Examination Room area; the Monitoring Area; and, the Standardized Patient Lounge. The Orientation Room is used to brief the students. A ceiling-mounted, drop screen and LCD projector are used to display PowerPoint and/or video presentations for orientation, registration, and briefing students on specific event protocols. The students are registered for clinical events, through a log-in process, which tracks the students, throughout their activities at the SIMCEN.

The Clinical Examination Room Area consists of 12 examination rooms, which serve as the simulated clinical environment for the SIMCEN. There are ten typical (120 square feet) examination rooms and two large (220 square feet) rooms with hospital beds that can be used for inpatient and/or critical care simulation. The large rooms are also suited for trauma simulation and small group teaching events. ***In the Clinical Examination Area, students have the opportunity for encounters with live patients who simulate specific challenges in outpatient, inpatient, or critical care settings.*** Specifically, individuals, referred to as standardized patients, are hired and trained to simulate scripted clinical cases. These clinical cases may be simulated using performance, make-up, real conditions, or a combination of all three. Each Clinical Examination Room is equipped with two video cameras and microphones that permit encounters to be recorded for subsequent analysis and self-evaluation. Each room is equipped with a computer for the patient; a wall-mounted computer is also located outside of each room for students to use for documentation, before and after, the encounter. Typically, clinical examinations are designed following a directive to achieve specific educational goals. The Standardized Patient Trainers and the Medical Director collaborate with faculty members to create projects that meet stated educational goals.

The Monitoring Area is located at the center of the Clinical Examination Area and allows the Standardized Patient Trainer and faculty instructors to monitor the progress of the clinical examinations. A specialized video router controls 24 videotape decks that track the students as they move from room to room. A touch-screen control panel permits cameras to be positioned for optimal imaging. ***Faculty and students are able to view recorded tapes, as if they were in the room, allowing for more detailed observation and more dynamic feedback***. The Monitoring Area is also used for training simulated patients.

The Standardized Patient Lounge is a staging area for simulated and standardized patients to prepare for, and to relax following, activities at the Center. This area is required as the *patient actors* often use theatrical make-up to simulate traumatic injuries or other conditions.

The Computer Laboratory. The Computer Laboratory has two sections: the Computer Laboratory itself and an adjacent Control Room. ***The Computer Laboratory has two primary functions. The first is to identify, develop, and/or use medical education software that contributes towards clinical or medical readiness skills. The second is to provide an environment in which computer-based, interactive clinical examinations can be administered.*** The Computer Laboratory consists of sixteen Internet accessible workstations that can run a variety of medical educational CD- ROMs. Eight overhead cameras and a one-way mirror between the Computer Laboratory and the Computer Control Room ensure that examinations are properly monitored, when the Computer Laboratory is being used for testing. Students use the Computer Laboratory to work with interactive software programs that may be linked to activities occurring in other functional areas of the SIMCEN. ***Additionally, the Computer Laboratory***

is designed to meet the specifications of the National Board of Medical Examiners (NBME) for a certified United States Medical Licensing Examination (USMLE). Although not currently certified, the Computer Laboratory assists students in preparing for the USMLE through the use of test preparatory software packages. Students and faculty can also use the computers to learn and evaluate various clinical and surgical skills (e.g., communication, history-taking, physical examinations, and cardiac auscultation) through interactive software applications. Many of the applications are offered using the local area network (LAN). Other applications are web based and accessed via the Internet. The Computer Laboratory also includes a separate Video Teleconferencing/Advance Distributive Learning (VTC/ACL) capability that serves as the audio/video entry and exit point to the outside world. Video signals from anywhere in the SIMCEN can also be viewed via a fiber optic connection and can be transmitted worldwide via VTC or the Internet.

The Computer Control Room is adjacent to the Computer Laboratory; it is the nerve center for the SIMCEN. All data, voice, and video signals are fed through the Control Room and can be routed to other areas in the SIMCEN, accordingly. The Control Room also houses several departmental servers that handle the current requirements of the Center. During testing, the Control Room operates as a monitoring station for instructors, allowing overall viewing of the Computer Laboratory through a one-way, mirrored window or specific viewing of the individual workstations from the overhead cameras.

The Surgical Simulation Laboratory. The Surgical Simulation Laboratory (SSL) uses virtual reality and a full-scale operating room mock-up to provide highly realistic scenarios for surgical training. This area is the first site approved to investigate teaching the surgical skills practicum for the Advanced Trauma Life Support Course through the use of computer-based simulators and plastic models rather than anesthetized animals or cadavers. ***During the past two years, the SIMCEN has conducted the Nation's first Advanced Trauma Life Support (ATLS) Course using virtual-reality based simulators, computer-controlled mannequins, and medical models instead of animals.*** The Operating Room is furnished to look and feel like a full-scale operating room. In addition to the typical Operating Room equipment, the room holds intravenous catheterization, bronchoscopy, endoscopy, and diagnostic ultrasound simulators designed to provide highly realistic scenarios for trauma, anesthesia, and surgical training. The Operating Room can be configured to match the conditions of a standard Operating Room, an Emergency Room, or an Intensive Care Unit. Here, a single human patient simulator responds to various drugs and interventions. Computer driven, the human patient simulator can be pre-programmed with patient characteristics or variables such as age, anatomy, and physiology factors depending upon the training event. Students are faced with real-life situations as the human simulator breathes out carbon dioxide, and breathes in various gases, depending upon the scripted clinical procedure. Beginning in 2000, when the second mannequin-based simulator was installed at the SIMCEN, through 2003, the two-day introduction to the SOM third-year surgical clerkship has included a day at the Surgical Simulation Laboratory operating room (OR) at the SIMCEN. Courses taught in the OR include an Introduction to Surgery Course for third-year SOM students, and an airway management workshop taught by the GSN Nurse Anesthesia faculty for providers at local Military Treatment Facilities. The OR is featured at the SIMCEN web site: (*http://simcen.usuhs.mil/Surgery/OR/index.html*).

The simulator has five palpable pulse areas and will exhibit the appropriate physiologic reactions in response to various intravenous or inhaled agents. ***Presently, there is a capability for 80 different drugs to be virtually administered by various computer microchips.*** The simulator responds to the type

and amount of these drugs according to instructor-determined, pre-programmed patient variables. In the Operating Room Control Room, a two-way headset and a one-way mirror into the Operating Room allow instructors to communicate with the Operating Room Coordinator. From the Control Room, the coordinator can change patient variables on the computer and even speak into a hidden microphone feed, on the simulated patient, in order to bring more realism to the scene.

The Virtual Reality Room, which is funded, in part, by the Association of Military Surgeons of the United States (AMSUS), develops computer-based surgical simulators and software applications with 3-D, haptic feedback features, designed to meet the educational objectives of USU. ***Two functional directives of the Virtual Reality Room are research that advances simulation procedures and harnessing the capabilities of existing technologies.*** In the Virtual Reality Room, state-of-the-art computer-based equipment enables students to view medical objects in two or three dimensions. *A haptic interface allows the computers to re-create the tactile sense, which permits users to touch, feel, manipulate, create, and alter simulated 3-D anatomic structures, in a virtual environment*. Here students can teach themselves, at their own pace; and, they can feel comfortable about making mistakes, as well as, repeating an exercise. The Virtual Reality Room is equipped with simulators for Vascular Anastomosis, Pericardiocentesis, a Diagnostic Peritoneal Lavage Unit, and a hand-immersive environment for on-going research. Both the Pericardiocentesis and Diagnostic Peritoneal Lavage Simulators were developed in the Virtual Reality Room. These two simulators are the first of their kind; and, they are unique to the SIMCEN. During 2003, **David C. Wherry, M.D., Professor, USU SOM Department of Surgery,** conducted 29 Ultrasound Courses, training 431 students. Also, during the past year, a total of 164 third-year students benefited from the resources of the Surgical Simulation Center. The facility was also used to conduct oral boards for 100 residents, under the direction of **Colonel Mark W. Bowyer, USAF, MC, FACS, Associate Professor, USU SOM Department of Surgery**.

Examples of Recent Achievements. In addition to participating in the numerous educational activities enumerated above and managing the tours and collaboration to assist other medical schools in developing similar simulation capabilities, the faculty and staff at the SIMCEN have undertaken the following endeavors, during 2004.

Funded Projects:

- A $200,000 contract with the Telemedicine and Advanced Technology Research Center, United States Army Medical Research and Materiel Command, to develop a *Virtual Reality Cricothyroidotomy Simulator for Advanced Trauma and Combat Casualty Training*; and, a $49,000 contract to develop a *Validation Study of the VIRGIL Trauma Mannequin*; and,

- A $20,000 contract with the Eastern Virginia Medical College (EVMC) and Old Dominion University (ODU) to develop a *Validation Study of a Catheter Insertion Project* conducted by EVMC/ODU.

Collaboration With:

- The Department of Psychiatry at the Walter Reed Army Medical Center in a Telemedicine and Advanced Technology Research Center, United States Army Medical Research and Material Command funded project, *Comparing Provider Recall, Therapeutic Alliance and Other Interpersonal Factors between Video Teleconferencing and Face-to-Face Clinical Encounters*;

- The Medical and Clinical Psychology Department at the USU SOM in a National Institutes of Health funded project, *USU Center for Health Disparity Research and Education*;

- The Departments of Psychiatry at the Tripler Army Medical Center (TAMC) and USU to conduct *Video Teleconferencing Clinical Encounters between Standardized Patients at USU and Undergraduate Psychiatry Clerics Located at TAMC*, and the TAMC Department of Internal Medicine to demonstrate *The Value of ACCESS GRID INTERNET2 Capabilities in Medical Education*;

- The Continuity Clinic of the Family Medicine Department at the Malcolm Grow Medical Center, piloted to use *Unannounced Standardized Patients in a Clinical Setting*;

- The Clerkship Directors at USU and Emory University to sponsor a post-course entitled, *Objective Structured Clinical Examinations and Standardized Patients in Medical Education: Getting Started and Expanding Roles for Physicians*;

- The USU SOM Department of Pediatrics in a Health Research Services Administration funded project to *Enhance Clerkship Education Modalities in Support of Developing High Stakes Clinical Assessment Cases*;

- The Telemedicine and Advanced Technology Research Center, United States Army Medical Research and Materiel Command funded project to *Validate Two Advanced Urethroscopy Simulation Workstations*, developed separately by Immersion Medical and Symbionix;

- The Research Triangle Institute, of North Carolina, in an Office of the Secretary of Defense, Health Affairs, funded project to develop *Virtual Trauma Training Scenarios for Primary Care Physicians and Physician Assistants*;

- The ICM 2, USU SOM Course Director to *Develop an Introduction of Physical Exam Teaching Associates Course Where Standardized Patients Are Trained in Specific Anatomical/ Physiological (i.e., abdominal, neurological, musculo-skeletal, etc.) Aspects of the Physician Exam Process*;

- The USU SOM Department of Medicine and the New York Academy of Medicine, Association of American Medical Colleges (LCME) project for *Enhancing Education for the Clinical Transition*; and,

- The USU Graduate School of Nursing and the USU SOM Department of Obstetrics and Gynecology on a *Genetics Education Counseling Course for Family Nurse Practitioner Trainees with Standardized Patients*.

Institutional Agreements. An institutional agreement is also in development to complete a Collaborative Research and Development Agreement (CRADA) with the Research Triangle Institute at North Carolina; a non-disclosure agreement has already been established, which addresses intellectual property protection requirements. Also, coordination has been initiated to complete a memorandum of understanding with the RDE Command (formerly STRICOM) to share source code data on simulation products developed under RDE Command contracts. And, a memorandum of understanding is in development with the Universities of New Mexico and Hawaii to share information technology data and capabilities developed through the TeleMedicine Outreach Community Health (TOUCH) Project; a non-disclosure agreement is already in place addressing intellectual property protection requirements.

Future Initiatives. The SIMCEN is currently planning for the development of a Computer-Aided Virtual Environment (CAVE). The CAVE is an immersive, virtual reality environment suitable for simulating mass casualty, triage and/or bio-chemical training scenarios. Students would be physically immersed in a virtual environment with patients, which can be either virtual, live, or high fidelity computer-driven human patient simulators. Students would be exposed to a variety of scenarios, and equally important, participate in a scenario where they can respond as an individual provider or as a member of a medical team. Further, the training scenarios could be linked via *Internet2* to other geographic locations so that other responders can participate in the same training scenario. The CAVE would be established in adjacent space to the SIMCEN. USU has already obligated funding to plan, design, and renovate the adjacent space; the Navy Public Work Center is coordinating with the USU Facilities Division and the SIMCEN to manage these efforts. SIMCEN staff have also collaborated with the University of Michigan and the Army Research Laboratory in Aberdeen, Maryland; as both have on-going CAVE projects. The SIMCEN is also collaborating with the University of New Mexico and the University of Hawaii, the RDE Command, and the Research Triangle Institute to acquire existing software developed under government contract that will provide the SIMCEN with 3-D landscape and medical content suitable for use in the CAVE.

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Research Administration.

RESEARCH: To be a leader in basic, clinical, and health services research to improve health care, to protect, sustain and enhance the fighting force and secure public health.

- Goal 3, RESEARCH, USU Strategic Plan, 2003.

Background. The Office of the Vice President for Research was established, in 1995, to facilitate, promote, and oversee the research activities at USU. The position of the Vice President for Research evolved through recommendations from the USU faculty. Following an extensive search, **Ruth Ellen Bulger, Ph.D., was selected as the first Vice President for Research and was appointed in March of 1996**; she served in that position until March of 2000, when she resigned as Vice President to focus on teaching and her many other professional commitments. *Michael N. Sheridan, Ph.D., Professor of Anatomy and Associate Dean for Graduate Education, subsequently served as the Acting Vice President for Research, while a national search was conducted*. **Steven Kaminsky, Ph.D., was selected as the second Vice President for Research and assumed the position in March of 2001.**

The Office of Research (REA) currently consists of fifteen full-time staff (fourteen civilians and one Army officer) who serve under the Vice President for Research. The Office of Research reviews, monitors, and coordinates approvals for all matters dealing with research at the University, to include the following: identification of potential funding sources; pre-award review and administration; grant awards and receipts; post-award administration; administration of the human research program, to include review and approval by the University's Institutional Review Board (IRB); and, monitoring of all regulatory compliance requirements.

The Office of Research provides service to three communities: the University as an institution; USU faculty and student investigators; and, the more than 100 funding entities that support research at the University. The REA staff operates the intramural grant program and provides administrative support for the SOM Research Merit Review Committee, which conducts peer review of all faculty applications for intramural funding. During 2003, the USU Intramural Program was funded at $2.78 million for USU student and faculty researchers. The intramural portfolio consisted of 69 protocols with special military interest, 40 awards for clinical research, and three projects in areas of educational research. Standard USU awards for militarily relevant research were typically funded at 90 percent of the applicant's budget request; clinical research awards were usually supported at 90 percent. As part of the University's on-going effort to encourage young faculty, all new assistant professors, who received starter awards, were funded at 100 percent of their budget requests. The 2003 USU student research programs supported the work of 5 medical students, 10 students in the Graduate School of Nursing, 42 candidates in the Master of Public Health Program, and 15 candidates in the Ph.D. or Dr.P.H. Graduate Education Programs. Student applications are reviewed by a faculty committee in each student's area of study and by the appropriate Dean.

The Office of Research similarly oversees nine multi-site, Congressionally-funded research programs, with FY2003 funding totaling $51,993,000: the TriService Nursing Research Program; the Center for Prostate Disease Research; the Defense Brain and Spinal Cord Injury Program; the Coronary

Artery & Prostate Disease Reversal Program; the Clinical Breast Care Program; the Post-Polio Research Program; Comprehensive Neuroscience; the United States Military Cancer Institute; and, the newly established program for Military Complementary & Alternative Medicine. Together, these programs support more than 150 individual research projects conducted at USU and elsewhere.

Extramurally funded research at USU was funded at a total of $43,281,850, during 2003, and included 198 projects supported by Federal organizations such as the National Institutes of Health (NIH), the National Science Foundation (NSF), the Department of Energy (DOE), the United States Army Medical Research and Materiel Command (MRMC), and the Office of Naval Research (ONR). These investigations explored a variety of scientific areas, including basic biomedical questions central to the mission of the Military Health System: the mechanisms, transmission, and control of a wide range of infectious diseases; a variety of crucial topics in combat casualty care, operational medicine, and health education and promotion; Defense women's health issues; and, the development of new methods for the diagnosis and treatment of medical problems faced by the United States military and their dependents. ***Thus, the total of the USU Intramural, Extramural, and Congressional Research Programs was approximately $98 million in 2003, with a total of over 460 active projects and hundreds of resulting publications***. (See Appendix C for examples of the achievements and recognition awarded to individual USU researchers.)

USU Researchers Investigate Diseases of Special Interest to the Military. A wide array of research protocols at USU investigate specific disease threats faced by the Military Health System's in its efforts for the sustainment of the Armed Forces, during peacetime and deployment under combat conditions. These projects all supported the essential military mission by advancing the understanding of both the transmission and the internal mechanisms of a spectrum of pernicious and/or common diseases that may be faced by warfighters. These research projects are expected to provide equally important applications in the growing effort devoted to homeland defense; the understanding gleaned by USU researchers will open avenues to better control, diagnosis, and treat natural and man-made biological threats, both at home and abroad. For example, malaria is endemic in many areas where the military deploys its fighting forces; technological advances conducted by USU researchers have made it possible to predict mosquito population levels and transmission risk for a range of mosquito-borne diseases such as malaria, even within precise areas and timeframes. By using satellite imaging and remote sensing devices, researchers assist in predicting high-risk locations for the occurrence of malaria and similar diseases. These predictions focus disease control operations and conserve scarce resources as well as human capital. Infectious diseases studied at USU have included, or continue to include, the following: malaria; Venezuela equine encephalitis (VEE); leishmaniasis; E. coli, H. pylori; and, bartonellosis. Examples of additional disease-related research have included: identification of previously unknown bacterial virulence genes; and, analysis of the genesis and pathology of various types of virus.

USU Research and Combat Casualty Care. Research conducted by USU faculty in the area of combat casualty care has enhanced the provision of rapid diagnostic methods and treatments that ensure military readiness, excellent care for deployed forces, and the rapid return of the injured and sick to active duty. Protocols, dealing with combat casualty care, have focused on the following areas/ examples: the exploration of the pain-control mechanisms that underlie established treatments, such as morphine; the provision of groundwork for effective strategies to limit nerve damage and to encourage

nerve regeneration; and, the identification of possible causes of life-threatening complications resulting from the combination of exertion and injury that are common under heavy battle conditions.

USU Research Strengthens Military Operational Medicine. USU researchers, in the area of operational medicine, advanced the understanding of, and the ability to manipulate, the physiological mechanisms of stress and immunity; human sleep and seasonal cycles; and, the neurological changes underlying short- and long-term memory. These discoveries should: enable warfighters to stay awake longer with fewer detriments to performance (this USU research was recognized by *Science* as one of the top ten scientific breakthroughs of 2002, and is discussed in Section II of the Journal); lead to better strategies for enhancing and preserving memory and reasoning capabilities under battlefield conditions; help the Uniformed Services and Veterans Affairs to understand, and ultimately prevent and treat, neuropsychiatric illnesses such as depression and post-traumatic stress disorder; and, assist deployed troops and their families to better prepare for, and contend with, the significant, common stressors of military operations.

Support for the Graduate Student Colloquium and USU Research Day. The Office of Research also provides annual coordination and support for the Graduate Student Colloquium and the Faculty Senate Research Day. The 10th Annual Faculty Senate Research Day and the Graduate Student Colloquium were held on the USU campus on May 14-15, 2003. This year's theme was *From Bench to Bedside and Battlefield: Translational Research at the Nation's Medical School*. The two-day event brought together researchers from USU, the National Naval Medical Center, the Walter Reed Army Medical Center, the Armed Forces Institute of Pathology, the National Institutes of Health, the Howard Hughes Medical Institute, the Washington Hospital Center, and the Centers for Disease Control and Prevention, as well as other prominent universities and hospitals. **Elias Zerhouni, M.D., Director, National Institutes of Health,** delivered the Plenary Lecture as a keynote speaker; and, **John D. Gearhart, Ph.D., Developmental Genetics Laboratory, Johns Hopkins University,** delivered the *Bullard Lecture*. The topics, of the workshop and symposia presented on May 15th, addressed: new requirements for research conducted under the newly enacted Health Insurance Portability and Accountability Act (HIPAA); clinical and basic research in brain injury; emerging techniques for proteomics; hemorrhage and associated biological responses; new imaging techniques for clinical and basic science research; recent research regarding obesity and nutrition; and, career opportunities for graduate students.

Enhancement of Administrative Services. During 2003, REA extended its regular meetings with the Research Administrators from all of the USU departments, to include a monthly request that each Research Administrator provide a list of the research applications likely to be submitted within the immediate timeframe. Compiling this monthly list has helped REA, department support staff, and faculty investigators coordinate their efforts to submit the best possible applications. The REA staff and Research Administrators continue to meet regularly to: identify and resolve problems; examine the processes for the submission, review, and administration of grant applications; and, strengthen their working relationships. REA staff also meets, at least monthly, with the Sponsored Project Office of the Henry M. Jackson Foundation for the Advancement of Military Medicine, which provides administrative services for more than 80 percent of USU's extramurally funded projects.

Since 2001, the Vice President for Research has conducted a series of weekly workshops that provide sustained, focused instruction and peer critiques for junior and mid-career faculty engaged in writing applications for extramural funding. Workshop sessions address the specific skills and expertise required to complete each section of the typical grant application, to include: writing the abstract for the grant proposal; summarizing the scientific background for the area of interest and proposed approach; developing the hypotheses and specific aims; presenting preliminary results; outlining experimental design and methodology; and, planing an appropriate statistical analysis. Four such workshops were conducted in 2003, to include a special series for post-doctoral fellows.

The REA Home Page. The REA home page, <*www.usuhs.mil/research*>, supplies pertinent, up-to-date, user-friendly information on both intramural and extramural grant opportunities, as well as, the capability to download a wide range of application and insurance forms. The Research Development Program now provides access to *ResearchResearch*, a database listing hundreds of funding opportunities available worldwide to faculty, post-doctoral fellows, clinical fellows, and students. In addition, *ResearchResearch* includes tips on grantsmanship, from matching research interests with a wide range of appropriate funding sources, to writing more successful applications.

Institutional Review Board. The Program for the Protection of Human Participants in Research and the USU Institutional Review Board (IRB) jointly ensure the protection of human volunteers, who participate in research projects at USU and its affiliates, from research risks. The Program's administrative staff, which functions as a part of the Office of Research, reviews each protocol with human subjects that is conducted at the University or by a member of the USU faculty or student body to ensure that:

- The research complies with the regulations and standards of DoD and other Federal bodies, as applicable;

- Potential risks to the subjects are minimized by the research design and do not outweigh the actual benefits of participation;

- Appropriate processes for obtaining informed consent from potential subjects are in place, adequate to the backgrounds of the volunteer population as well as the research design, not coercive, and respectful of the needs of the individual volunteers; and,

- The documents produced during the consent process and the conduct of the research protocol are maintained in accordance with standard scientific practice and Federal regulations.

Each research project, following staff review and recommendations, is presented to the full IRB at its monthly meeting. In 2003, the IRB reviewed and approved the following: 171 initial proposals for human subject research; 169 amendments to protocols already underway; and, 230 annual or semi-annual reviews of continuing projects. A second IRB coordinator was added to assist with the growing number of reviews and approvals, particularly as required for the Congressional programs overseen by USU.

The IRB meets at least once a month, with additional, *ad-hoc* meetings, as required, over the course of each year. It is composed of 15 voting members, including six physicians, one basic scientist,

two social/behavioral scientists, one nurse scientist, the USU Chaplain, the SOM Commandant, an enlisted soldier, and two other representatives from the non-scientific USU community. Twelve members are drawn from the USU faculty and staff; two are employed by NIH; and, one practices at WRAMC. Three *ex officio*, non-voting members provide coordination and staffing and attend each meeting: the IRB's Executive Secretary; the Assistant Vice President for Research; and, a member of the USU Office of the General Counsel.

A separate Institutional Review Board for the United States Military Cancer Institute (USMCI), formally approved on January 14, 2002, continues to develop as the Institute's protocols acquire scientific approval at the member institutions. The USMCI IRB draws its members from the University and its affiliated medical centers: the National Naval Medical Center; the Walter Reed Army Medical Center; the Armed Forces Radiobiology Research Institute; and, the Malcolm Grow Medical Center. The USMCI IRB ensures that its member institutions and their physicians, dentists, nurses, and other health care providers pursue oncology research in compliance with Federal regulations and accepted ethical standards of scientific conduct. Protocols conducted under the auspices of the USMCI are designed not only to improve the quality of patient care, but also to contribute to better staff education and training.

Positive Reviews of the USU IRB Program. A review of the USU IRB Program was conducted during July of 1997, by the Director, Scientific Activities, Office of the Assistant Secretary of Defense for Health Affairs. *This review found no significant deficiencies* and the REA staff has since been expanded to accommodate the growing number of protocols requiring IRB review. In addition, the Food and Drug Administration (FDA) has cognizance over Federal IRB Programs where research is conducted with investigational new drugs and devices. Because some USU research falls into this category, the FDA has the authority to audit the entire USU program. On March 22 and 23, 1999, an FDA inspector conducted a two-day audit of the USU Human Use Program and the USU IRB. The audit included a review of IRB minutes from 1997, 1998, and 1999, plus a random sampling of the IRB files on protocols with a greater than minimal risk to human subjects. *The USU IRB Program was found to be in full compliance with the governing regulations (Title 21, Code of Federal Regulations, Parts 50 and 56) with no need of corrective action by the Division of Scientific Investigations, Office of Medical Policy, Center for Drug Evaluation and Research of the FDA.* During 2001, in addition to the previously awarded Assurance of Compliance from DoD, *USU also obtained a Federal-Wide Assurance from the Department of Health and Human Services (HHS)*. Each assurance sets out USU's institutional responsibilities in the protection of human subjects to include: 1) standards for the initial and continuing review of research protocols; 2) requirements for the prompt reporting of information required by each Federal agency, to include the suspension or termination of any study due to non-compliance with regulations or unexpected, serious harm to a research volunteer; and, 3) guidelines for the appropriate training and educational requirements for IRB members, USU investigators and administrative staff. *The audits conducted by the Director of Scientific Activities for the Office of Health Affairs in July of 1997, and the FDA in March of 1999, combined with the Assurance of Compliance obtained from DoD and the Federal-Wide Assurance from HHS during 2001, have validated the outstanding support rendered by the USU Human Research Protection Program and the USU IRB.*

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The 10th Faculty Senate Research Day and the 2003 Graduate Student Colloquium. The 10th Annual Faculty Senate Research Day and the Graduate Student Colloquium were held on the USU campus on May 14-15, 2003. This year's theme was *From Bench to Bedside and Battlefield: Translational Research at the Nation's Medical School*. This theme focused on an important area in biomedical research - the need to bridge the gaps between scientific knowledge and clinical practice - and also reflected USU's special role in both civilian and military biomedical research. The two-day event brought approximately 250 individuals to the USU campus, including researchers from affiliates such as the National Naval Medical Center, the Walter Reed Army Medical Center, the Armed Forces Institute of Pathology, the National Institutes of Health, the Howard Hughes Medical Institute, the Washington Hospital Center, and the Centers for Disease Control and Prevention, as well as other prominent universities and hospitals. **Elias Zerhouni, M.D., Director, National Institutes of Health,** delivered the Plenary Lecture.

On May 14th, two symposia were presented: *New Confidentiality and Privacy Regulatory Requirements in Human Research: Use of Tissues, Tissue Banking, Databases, Consent Forms and Everything Else* (chaired by **Richard L. Levine, Ph.D., USU Assistant Vice President for Research,** and presented by **Eric Marks, M.D., Professor, USU SOM Department of Medicine, and Associate Dean for Faculty Affairs**); and, *Brain Injury - The Disease Amongst Us*, which consisted of four presentations by accomplished individuals from USU (**Denes V. Agoston, M.D., Ph.D., Associate Professor, USU SOM Department of Anatomy, Physiology, and Genetics,** and **Geoffrey Ling, M.D., Ph.D., LTC, MC, USA, Professor, USU SOM Department of Neurology**) and the National Institutes of Health (**Jordan Grafman, Ph.D., National Institute of Neurological Disorders and Stroke,** and **John Hallenbeck, M.D., National Institute of Neurological Disorders and Stroke**). The topics, of the symposia presented on May 15th (Emerging Proteomics: Techniques and Applications; Biological Response to Hemorrhage: Recent Advances on the Bench and the Battlefield; Forefront of Imaging Techniques in Clinical and Basic Science; and, The Obesity Epidemic: Scope and Clinical Approaches) were selected to highlight areas in military and civilian medicine that present particular challenges for translational research. In addition to 35 oral presentations, there were more than 150 poster presentations featuring the research work of the USU community.

In 1980, the Graduate Student Colloquium was established to promote scholarly interchange between graduate students and the academic community at USU and to recognize the research achievements of the USU graduate students. The 2003 Graduate Student Colloquium featured a Career Development Workshop on opportunities for graduate students, symposia, and the *John W. Bullard Lecture*. Six oral presentations by graduate students were followed by *The 2003 John W. Bullard Lecture*, which was presented by **John D. Gearhart, Ph.D., Developmental Genetics Laboratory, Johns Hopkins University**; the title of his presentation was *Human Embryonic Germ Cells: Differentiation and Transplantation*.

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USU Center for Laboratory Animal Medicine. The Center for Laboratory Animal Medicine (LAM) is responsible for the humane care, use, and welfare of research animals, in accordance with: all Federal and Department of Defense (DoD) regulations and guidelines; the *Guide for the Care and Use of Laboratory Animals*; as well as, USU Instruction 3204, *The Use of Animals in the USUHS*.

On November 5, 2002, the USU Center for Laboratory Animal Medicine received confirmation of continued accreditation from the Council on Accreditation of the Association for the Assessment and Accreditation of Laboratory Animal Care, International (AAALAC). AAALAC is a private, non-profit organization that promotes the humane treatment of animals in science through a voluntary accreditation program. AALAC's voluntary accreditation process is a way in which animal research programs demonstrate that, they not only meet the minimum standards required by law, but are exceeding those standards to achieve excellence in animal care and use.

The Council on Accreditation of the AAALAC has reviewed the report of the recent site visit to USUHS... The Council commends you and your staff for providing and maintaining a high quality program of laboratory animal care and use. Especially noteworthy were the commitment and dedication of personnel at all levels, the Institutional Animal Care and Use Committee's program oversight and monitoring, the outstanding husbandry practices, and the well maintained facilities. In addition, development of the rodent breeding database and efforts focused on environmental enrichment were commendable. The Council is pleased to inform you that the program conforms with AAALAC International standards as set forth by the Guide for the Care and Use of Laboratory Animals, NRC, 1996. Therefore, FULL ACCREDITATION shall continue.

Background. The Center for LAM is divided into four Divisions: the Animal Husbandry Division; the Veterinary Medicine Division; the Veterinary Surgery Division; and, the Veterinary Pathology Division. The LAM staff includes three military veterinarians, nine United States Army Animal Care Technicians, five United States Navy Surgical Technologists, three United States Navy Medical Laboratory Technicians, and a civilian professional, technical, and support staff of eighteen individuals.

In July of 2003, Heating, Ventilation and Air Conditioning (HVAC) renovations began in the main side of the Central Animal Facility (CAF). For the remainder of 2003, laboratory animals were housed on the G-200 side of the CAF. During this period, animal census was down by approximately 20 percent; the cagewash area was down and cages were washed by hand (approximately 500 cages per week; and, all animal surgeries were conducted in the Multidiscipline Laboratories and in the Department of Surgery's surgical suite. Despite the inconvenience and the significantly increased workload caused by the HVAC renovation project, the newly installed air handlers and duct work, now ensure a well-balanced and clean environment for the animals in the LAM areas; without the dedicated efforts of the LAM staff, the renovation would not have been possible.

During 2003, while undergoing the HVAC renovation project, the LAM Veterinary Surgery Division (VSD) provided surgical training support to qualified USU faculty, supporting both the teaching mission and research protocols. The VSD is composed of two large teaching laboratories and two operating rooms used chiefly for research protocols involving non-rodent species. These areas are equipped with modern surgical and surgical support equipment, which allows comprehensive care and monitoring. Support areas include separate instrument cleaning and sterilization rooms, a surgeon's scrub area, and a large multi-purpose room used for both pre-operative procedures and post-operative recovery. Also, co-located with the surgical section are radiology support services that include a human hospital GE

Advantx X-ray unit equipped with fluoroscopy. This equipment allows advanced diagnostic capabilities for the central animal facility and serves as a tremendous resource for USU investigators. In November of 2002, a water-softening system was installed in the LAM cage washing area; this system assists in decreasing the build-up of harmful mineral deposits in the cage washing machinery, thus extending the *life* of this critical equipment. In addition, the old flooring was also removed in the G200 area, which houses the large animal species, and was replaced with epoxy-resin flooring; this allows for enhanced sanitation practices and ensures a safe and comfortable environment for the research animals.

A variety of significant teaching laboratories were conducted, during 2003, by the VSD. These laboratories provided USU students with invaluable experience working with biological tissue; these laboratories were frequently reported by the medical students to be one of their most valuable learning experiences. The teaching laboratories provide the students with the opportunity to gain experience in basic surgical skills and the proper handling of tissue, among other critical techniques. These skills help the students to more effectively function during their future residencies and in the practice of medicine. Also, in the event that as military physicians they are deployed under battlefield conditions, the familiarity and heightened skill level afforded by the teaching laboratories will prove to be of significant value. Students are exposed to a combination of training techniques prior to specific training on the use of animals; the ever-increasing use of computer simulation and mechanical surgical simulation devices complements the students' surgical training experiences and also reduces the number of animals required to provide the necessary training.

Navy corpsmen staff the VSD; all are trained human surgical technicians, which enables a solid professional relationship between veterinary surgery staff members, surgeons, and students. The corpsmen also contribute significant preoperative and monitoring skills to all of the teaching laboratories of the Multidiscipline Laboratories. An assignment to USU has been found to tremendously broaden the experience of the corpsmen and it affords a unique training opportunity through the combination of human surgical skills with current veterinary technology.

During 2003, the Veterinary Medicine Division (VMD) was responsible for: veterinary medical diagnosis; the treatment and care of all USU animals; initiating, implementing, and conducting essential processes for monitoring animal health status and animal quarantine programs; and, providing animal handling and care assistance to USU investigators. In meeting its mission, the VMD monitors on-going projects for compliance with USU guidelines, participates in pre- and post-surgical preparation and care of laboratory animals, and provides a training program for VMD personnel. The VMD also prepares and presents training courses in the following: laboratory animal research techniques; animal care comparative medicine; zoonotic diseases; and, the inventory and procurement of veterinary equipment. Significantly, the VMD personnel initiate and/or participate only in research projects that have been approved following established academic guidelines.

The Veterinary Pathology Division (VPD) is responsible for: operating the University's centralized diagnostic laboratories; providing gross anatomic, histopathologic, and clinical pathologic laboratory support for LAM and USU investigators from both the basic and clinical science SOM departments; ensuring consultation services for research personnel in reference to the diagnosis of infectious and/or zoonotic disease; and, the selection of outside laboratories required for specialized tests. During 2003, the VPD also interpreted laboratory results and made recommendations for further testing, if indicated, and informed researchers of abnormal results, which could have impacted the outcome of their research.

The VPD participates in, and supports, the USU teaching programs for medical and graduate students, research technicians, and animal care technicians. To more effectively accomplish its mission, the VPD is subdivided into a Histopathology Section and a Clinical Pathology Section; the VPD laboratory is certified by the College of American Pathologists (CAP).

The Animal Husbandry Division (AHD) is responsible for providing animal caretaking services within the LAM and USU. During 2003, the AHD performed daily feeding, watering, and cage changing, to include animal care on weekends and holidays. The AHD personnel submit and follow up on facility and equipment work orders; and, they are responsible for daily monitoring, and ensuring the proper functioning of, the sterilization, sanitization, refrigeration, HVAC, and cleaning equipment. Additional equipment operated and maintained by the AHD include: the Microisolator Caging Systems, Laminar Flow Racks, Thoren Units, and Horsfal Isolation Units. The AHD personnel are also responsible for the following: animal ordering, tracking (to include animal census or inventory), and housing of animals, upon receipt; ordering of feed, bedding, caging and caging accessories; observing the status of animals and facilities while performing husbandry procedures; and, maintaining personal protective equipment and chemicals, as appropriate, for meeting the animal care mission.

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USU Barrier Facility. A rodent barrier facility occupying approximately 2,558 square feet within the USU Central Animal Facility is capable of housing 6,000 mice. This resource was conceived and developed by the Vice President for Teaching and Research Support and veterinarians from the Center for Laboratory Animal Management, along with input from the USU Institutional Animal Care and Use Committee, and interested USU investigators. The facility, opened during 1999, is equipped to accommodate the needs of USU investigators whose protocols require that research animals (rodents) be kept under ultra clean conditions. Ultra clean conditions are necessary to reduce the chance of pathogen exposure, which could have devastating effects on research goals and potentially result in the waste of animal lives, investigators' time, and related resources. The facility is also intended for the housing of transgenic mice (mice that have been altered genetically to simulate disease states or modified biochemical conditions).

The Barrier Facility includes one full-time technician who is specifically trained in transgenic techniques and is capable of producing transgenic animals; the technician daily monitors animals housed within the barrier and is responsible for: 1) written entry procedures (which include the use of personal protective equipment) and the restriction of non-essential personnel; and, 2) the conduction of training on barrier-housed animal handling procedures. Equipment acquisitions in support of the barrier include ten additional ventilated cage racks and a computerized, controlled-rate freezer for the cryopreservation of crucial reproductive elements (mouse embryos, eggs, and sperm). The controlled-rate freezer is a state-of-the-art piece of equipment that allows the long-term storage of frozen mouse embryos. Once a transgenic or other valuable mouse line is developed, the cryopreservation technique keeps that line viable without having to house large numbers of breeding animals to maintain the line. When a particular mouse line is required, the embryos are thawed, implanted, and normal breeding of the line continues. This saves a tremendous amount of space and resources that would normally be required for maintaining a breeding colony. *The capability to produce transgenic animals for investigators is a research tool that is unique to other Department of Defense research facilities in the National Capital Region*.

The barrier is equipped with a limited access card key system and consists of four sections: an autoclave area with two physically separate rooms; five clean animal holding rooms; one procedure room; a laboratory for transgenic surgical and manipulative procedures; and, a storage area. One of the animal holding rooms can be used as a quarantine room for animals awaiting final clearance of health status. All barrier mice are housed in specially ventilated cage racks, such that the animals are only exposed to highly filtered (sterile) air. All supplies (caging, bedding, food, and water) are sterilized prior to entry or use in the barrier. The transfer of mice from soiled caging to clean cages is performed in a positive pressure laminar flow cabinet, which further ensures protection from pathogenic agents. The USU barrier has the distinction of being free of rodent diseases due to the significant efforts of the USU staff.

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Center for Environmental Health and Occupational Safety. The mission of the USU Center for Environmental Health and Occupational Safety (EHS) is to provide a safe and healthful environment for all students, faculty, staff, and visitors. Education in the health sciences and research involves the purposeful and safe use of hazardous materials, including chemical, biological, and radiological agents. Such work requires the combined cooperation and dedicated efforts of a host of multidisciplinary educators, researchers, and the appropriate support staff to safely ensure mission accomplishment. The Center for EHS continuously fosters safety, health, and environmental awareness in, and around, the USU community through essential preparation, prevention, and implementation of protective measures commensurate with the work to be performed. The Center is composed of three divisions: the Occupational Medicine Division; the Radiation Safety Division; and, the Industrial Hygiene, Safety and Environment Division. In May of 2003, a new Director of EHS reported for duty and continues USU's on-going initiative to improve its health, safety, and environmental programs. The EHS commenced significant initiatives, during 2003, to improve the overall health and safety climate of USU, as reflected in the Divisional reports, which follow.

Radiation Safety Division. A number of initiatives were completed, in 2003, for enhancing radiation safety services. A standardized Radiation Safety Binder and accompanying CD-ROM, containing updated procedures, forms, permits, safety information, and a location for storing data collected in the laboratories, were provided to each USU research laboratory, as appropriate. Initial Radiation Safety Training, with additional annual refresher training sessions, were customized and implemented to assist the Principal Investigators. A special training package was also developed for those researchers, not as yet rated as Principal Investigators, but who are approved to use radioactive material. Radioactive waste containers stored in the laboratories were secured, throughout the University, ensuring on-going compliance with Nuclear Regulatory Commission recommendations. The newly established Laser Safety Committee completed its first year, as a fully functional unit. This committee consists of representatives from the major laser users at USU and the EHS staff; it is designed to ensure that all guidelines, rules, and regulations regarding lasers are adhered to.

Occupational Medicine Division. This Division conducts Medical Surveillance and other Occupational Health Programs in a variety of areas including animal care, pregnancy, hearing

conservation, laser eye safety, immunizations for laboratory and health care workers, treating and tracking occupational injuries, ergonomics, blood borne pathogens, wellness programs, and biological safety. The Occupational Medicine Division has implemented several improvements in procedures for reporting and tracking health and safety issues across all surveillance programs. These improvements have resulted in streamlined data collection and retrieval and tracking abilities for use in health and safety analyses. Enhanced information collection procedures regarding patient input, patient interview, medical evaluation, and industrial hygiene evaluation were also implemented.

Regarding biological safety, the Center for EHS is responsible for managing the Center for Disease Control (CDC) Select Agent Registration Program at USU. This essential program provides special attention to security and additional protective safety measures for hazardous agents, as determined by the CDC. The Select Agent Program regulations changed, during 2003, requiring extensive improvements in procedures involving: facility documentation and inspection; security plans; specialized training programs; Federal Bureau of Investigation (FBI) background checks on participating personnel; procedures for ordering, receipt and inventory of select agents; and, emergency plans. In coordination with the USU Security, Facility, and Logistics Divisions, and the Chair, SOM Department of Microbiology and Immunology, EHS implemented all procedural changes. In 2003, the CDC and a DoD security team reviewed the USU Select Agent Program, with highly positive results.

Industrial Hygiene, Safety and Environment Division. This Division provides essential industrial hygiene and laboratory safety support to approximately 1,700 USU faculty, staff and students, with approximately 300 laboratories being served. Programs include: Workplace Surveillance; Chemical Waste Management; Laboratory and Chemical Hygiene Training; Hazard Assistance; Regulated Medical Waste; and, Regulatory Compliance Assistance. During 2003, program enhancements were initiated to include a Program for Hazard Communication Standardization across the University; the program provides for the following: standardized laboratory door signage; consistency in chemical container labeling; and, an improved Health and Safety Compliance Assistance and Audit Program. A 100 percent laboratory/work center hazard assessment verification walkthrough was also initiated, with completion expected, in early 2004. Information obtained from this effort will provide current locations of essential safety equipment and update the EHS Laboratory Hazard Database. Additionally, updated information provides emergency responders with essential hazard information on USU's facilities and further defines workplace monitoring priorities. Improvements are also being made in sample collection and in-house analysis abilities. Such initiatives will enhance the screening of workplace and personnel environments for hazardous agents used in conducting purposeful medical research.

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SOM Department of Psychiatry Sponsors a Collaborative Relationship with the Stanley Laboratory of Brain Research.

> **The Stanley Brain Bank, part of the Stanley Medical Research Institute, is made possible through the generous funding of the Theodore and Vada Stanley Foundation... The Brain Bank is part of the School of Medicine Department of Psychiatry of the Uniformed Services University of the Health Sciences and is located on the grounds of the National Naval Medical Center in Bethesda, Maryland. The Stanley Brain Bank has 500 specimens; in addition to using the tissue for its own research, the Stanley Brain Bank has sent over 100,000 sections and blocks to 120 research groups around the world. At most national and international research meetings on schizophrenia and bipolar disorder, at least half of the presentations and posters on neuropathology reflect work utilizing tissue from the Stanley Brain Bank.**
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> - **E. Fuller Torrey, M.D., Executive Director, the Stanley Foundation Research Programs on Schizophrenia and Bipolar Disorder**, *Stanley Brain Bank Newsletter*, No. 10: Spring 2002.

Background. In February of 1999, during a ribbon-cutting ceremony, the University President welcomed the Stanley Laboratory of Brain Research to the SOM Department of Psychiatry. Through a collaborative arrangement with the University, the School of Medicine, and the Stanley Foundation, the USU community now has access to the Stanley Laboratory's brain specimens from individuals who suffered from diseases such as schizophrenia, bipolar disorder, and severe depression - the largest of such collections in the World. The Stanley Foundation Brain Bank and Neuropathology Consortium is made possible through funding from the Theodore and Vada Stanley Foundation. Its purpose is to collect postmortem brain tissue and to distribute it, without charge, to research groups working on schizophrenia and bipolar disorder (manic-depressive illness).

Current Activities. **E. Fuller Torrey, M.D.**, and his research group continued to provide outstanding expertise to the University, throughout 2003. The Stanley Foundation postmortem brain collection for research on schizophrenia and bipolar disorder has over 600 specimens; the USU Laboratory has distributed more than 160,000 sections and blocks of tissue to 160 research laboratories worldwide that are conducting research on these diseases. Some 55 large freezers contain the collection located at the Brain Research Laboratory in the USU SOM Department of Psychiatry. The specimens are approximately evenly divided among individuals who were diagnosed with schizophrenia, bipolar disorder (manic-depressive illness), severe depression, and normal controls. Most of the specimens are provided to researchers doing research on schizophrenia, bipolar disorder or depression. For example, during 2000, the Stanley Foundation donated a normal control specimen to a World Health Organization project dedicated toward the establishment of worldwide standards for brain tissue for comparison with prion-caused diseases such as Creutzfeldt-Jakob Syndrome. On April 9, 2001, The Washington Post featured Doctor Torrey in an article entitled, *Thinking Outside the Box*. The article included the following statement: ***The Stanley Foundation is supporting a quarter of the research on schizophrenia and half of the research on manic-depression in both the United States and Europe***. In addition, Doctor

Torrey's article, *Severe Psychiatric Disorders May Be Increasing*, was published in Psychiatric Times, Volume XIX, Issue 4, April 2002. Also during 2002, Doctor Torrey received the *William C. Porter Lecture Award* from the Association of Military Surgeons of the United States.

When the Stanley Foundation initially assumed responsibility for the Neuropathology Consortium, it looked forward to the day when it would have hundreds of measurements on the same parts of the brain from many different laboratories. That task is being addressed through the work of **Doctor Michael Knable** who is assessing over 1,000 markers of brain function in the prefrontal cortex, cingulate, hippocampus, and superior temporal area. Many abnormalities from this study have already been published in Brain Research Bulletin (Volume 55, pages 651-659, 2001) and Clinical Neuroscience Research (Volume 2, pages 171-181, 2002); other publications are in progress.

In May of 2001, Morley Safer of *60 Minutes* interviewed Doctor Torrey with a focus on his research on schizophrenia and bipolar disorder. That interview was featured on the April 21, 2002 edition of *60 Minutes*. Doctor Torrey co-authored the book, Surviving Manic Depression: A Manual on Bipolar Disorder for Patients, Families and Providers (published by Basic Books, 2002); and, he also published The Invisible Plague: The Rise of Mental Illness from 1750 to the Present (Rutgers University Press, 2002). During 2003, he was profiled in the Princetown Alumni Weekly and the Stanford Magazine.

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Information Technology.

Background. During 1994, committees were formed at the University by the School of Medicine and the Faculty Senate to address USU's future use of computers and technology in general. With the rapid development of Information Technology (IT) and Medical Informatics at USU in mind, the University President sent a delegation of seven USU representatives to the American Association of Medical Colleges (AAMC) Information Technology Conference. The conference served to reenforce the University's inclusion of computer-assisted communication and technology within its strategic planning process. With support from the leadership at USU, strategic goals were developed so that Medical Informatics would be utilized to emphasize distance learning, continuing medical education, computer-assisted medical education, access to medical databases, and other medical information systems. The focus of those efforts, in accordance with the University's mission, would be on the unique educational requirements of military and disaster medicine. In October of 1997, a number of USU information technology-related committees were combined to form the Automated Information Systems Policy Committee (AISPC). This committee met, as required, to review guidance and objectives, identify resources, develop requirements, and plan information technology policy strategies and training.

Overview of Activities in 2003. On-going activities and improvements reported, during 2003, include the following: **Servers:** Provided daily maintenance support for more than 52 network servers and devices. **Network:** Utilized large optical storage devices to support USU's data. **Enterprise Database:** Successfully developed and deployed two additional applications of the USU Corporate Database - the Admissions and Registration Application for the Graduate Education Office; and, the USU

Alumni Application. **University Homepage:** USU Webmasters redesigned the University's Homepage and core pages. **Training:** The UIS Training Officer developed the *UIS User's Guide* in support of the University's Strategic Plan. **Desktop Computers:** UIS continued its on-going management of a three-year technology refreshment cycle for 976 desktop computers within the University. **Centralized Software and Support:** Managed all of the USU supported software for the central computing facilities and acquired new site license software to assist researchers, students, and library staff in managing database references. **Teleconferencing:** Substantially improved systems for up and down links for the University's video teleconferencing systems. **New Technology:** Initiated the development of a pilot project for wireless access within the University. **Network Separation:** Began building the infrastructure and performed tasks to separate the *.mil* and *.edu* networks. **UIS Professional Training:** UIS personnel continued to receive certification and training (e.g., MCP, MCSE, Oracle, Contracting, Supervisory, and Networking) to better support the various USU departments and activities.

Customer Support. During 2003, the University Information Services Management Center (UIS) provided support for almost 3,000 information systems users. Support was provided in the following areas: accessing e-mail; remote dial-in accounts; Internet Protocol (IP) and IP2 connections; and, satellite and software applications. During the past year, UIS supported: 1,500 dial-in-users; 2,236 voice and fax telephone lines; and, 1,400 Voicemail Systems located on and off campus, at the National Naval Medical Center, other DoD facilities, and various non-DoD facilities. ***In addition, as the owner of a Class B Internet License, USU acts as an Internet Service Provider (ISP) for the National Naval Medical Center and 12 off-site DoD activities from Groton, Connecticut to Quantico, Virginia***.

Desktop Computers. Following guidance from the Office of the Assistant Secretary of Defense for Health Affairs (ASD/HA), a plan to lease desktop computers by the University was implemented in 1998. The plan calls for all basic office automation and teaching computers to be replaced with leased systems. In accordance, the UIS Helpdesk deployed the fifth phase of the University's desktop computer leasing program, during 2003; this cycle included an additional 60 new leased machines. ***This brings the USU total to 976 desktop computers in a three-year technology refreshment cycle***. This process continues to provide standardization, technology refreshment, enhanced budget planning, compatibility, and improved user support. UIS continues to manage $583,000 in contracts to support the leased machines and $187,000 to support software licenses for the central computing facilities.

Help Desk. A set of desktop tools, also based on ASD/HA guidance and USU requirements, was recommended by the AISPC and approved by the USU President. In addition, the University signed an agreement under a Maryland State Educational Contract (the Maryland Enterprise Educational Consortium (MEEC) with the Microsoft Corporation that provides site licenses at significantly reduced educational rates. This agreement allows the UIS Help Desk to make the latest Microsoft software available to all faculty, staff, and students. *The selection of a single set of desktop tools has greatly simplified user support and improved the Help Desk response*. During 2003, the Help Desk received 7,726 requests for assistance, of which, 3,301 calls were assigned and resolved by the Help Desk Branch. In efforts to continually prevent and resolve virus attacks, as well as provide prompt action for its customers, *the Help Desk resolved more than 308 virus requests, this past year*. Based on recommendations from one of USU's Strategic Planning Committees and the UIS Training Coordinator, the UIS Help Desk

provided weekly computer tips to users, along with timely alerts reference protection and resolutions for numerous computer viruses. The Help Desk acquired site-wide licenses for *EndNote*, *ProCite*, and *Reference Manager*, in 2003. This software helps researchers, students, and library staff to manage database references, build bibliographies, and search the Internet for references. In 2003, the Help Desk provided application requirements to the Software Development Team; this action took place during the analysis phase of a project to integrate isolated Help Desk databases into a central location, to be shared and associated with other related records. During the latter part of 2003, the Help Desk initiated a project to implement the web-based call tracking tool (*iHeat*), to work in conjunction with the existing client tracking system. This tool will allow technicians and managers to access records from a web location versus desktop client. Other successful Help Desk projects, during 2003, included: conducting an annual inventory of all leased machines; IP tracking and maintenance of databases; testing and deploying new software products; deployment and replacement of two rounds of leased machines; and, management of USU supported products. The UIS Help Desk continues to participate in USU-located training on standard operating procedures and off-site training to acquire professional certification, which contributes to the reduction of calls and an increase in user productivity.

Software Development. During 2003, the Information Engineering Branch (IEB) provided continuity in the development of applications and populating data into the USU Corporate Database. The Enterprise Database is designed to track people, processes, and property at USU, through a central database structure, which will be shared or accessed by staff, faculty, and students. While the scope of the project was initially to replace applications on the Legacy System, it has expanded to isolated personal computer (PC) applications.

In 2003, the IEB successfully deployed a client/server and web-based application for the Graduate Education Office. For the first time at USU, potential graduate applicants are able to apply to the USU Graduate Education Program via the Internet. With the implementation of this system, ***the Graduate Education Office (GEO) can now electronically process and matriculate applicants, and register them for all courses. Faculty and staff utilize the GEO System to electronically submit grades to the registrar; grades are then verified and posted to the web***, which is then viewable by the students through their individual, secure accounts. This system consolidates and replaces two Legacy Systems that are no longer accessible to the users.

Also during 2003, IEB developed and implemented the USU Alumni Application. This application allows for the tracking of all USU Alumni in a central database. ***The Alumni System tracks all pertinent data for USU Alumni and includes the ability to store several addresses for location information and to maintain records of Alumni training, promotions, awards, and certifications.*** As a result, the Office of Alumni Affairs has readily available mailing lists, in addition to, various reports that demonstrate the success of the USU Alumni. The implementation of the Alumni Application replaces a Legacy System and three separate pc-based databases that were in use by the Graduate Education Office, the Graduate School of Nursing (GSN), and the School of Medicine (SOM) for tracking USU Alumni. In 2003, IEB also completed the *build phase* of the Laboratory Animal Medicine System; due to the complexity of this system, implementation will be completed, in phases, during 2004.

Software Development - Preliminary Planning. During 2003, the IEB Management Team started the preliminary investigation and planning of applications to be incorporated into the Enterprise Database for 2004. Some of the activities involved management briefings, meetings with potential customers, gathering information, defining scope, and estimating start dates. Applications for the following USU activities were identified for software engineering efforts: Continuing Education for Health Professionals; the Biomedical Instrumentation Center; the Military Training Network; Civilian Human Resources; Security; Military Personnel; and, the Audio Visual Center.

Software Maintenance. During 2003, the IEB responded to 1,163 maintenance, enhancement, and data requests associated with software applications developed before, and during, 2003. The requests included service for the Student Tracking and Registration System for SOM students (STARSII); Personnel Locator; Mailbox System; Graduate Education, Alumni Office, Pharmacy, and GSN Applications; and, AMCAS support (external files) and web applications.

New Technology. During 2003, UIS began investigating functions of the University that could benefit from wireless technologies. The IEB and the Operations Branch of UIS, in coordination with potential users, met to discuss possibilities and to initiate future planning. The IEB continues to staff a stable development team comprised of experienced software developers and a database administrator. Staff members hold college degrees and Oracle and Microsoft professional certifications. In all development projects, the *systems development life cycle methodology* is employed. IEB continues to use the latest versions of Oracle software and quality computer hardware to provide the University with state-of-the-art applications in support of its many processes and functions.

Web Development. Web development projects, during 2003, included the redesign of the USU Homepage and subsequent core pages of the USU web site. This redesign was approved by the USU leadership and provides several areas that highlight USU events. These areas include: ***the scrolling information box; current events; essential links; navigational links; and, the home page footer, which provides general contact information to web site visitors***. Additional web development projects include the Graduate Education on-line Application, the Alumni Web site redesign, and the LAM web applications. The Web Masters continue to use a systematic methodology to perform web development activities. A new development/test server was implemented; in addition, a Mackintosh computer was also implemented for multi-platform testing purposes. Web projects were developed using *Microsoft ASP*, *Visual Basic*, *PERL*, and ran on a Microsoft IIS Server in a Windows 2000 Environment. To ensure data integrity and security from intrusions, all servers are routinely monitored and backed-up.

Training. During 2003, the UIS Training Officer provided classroom training for all SOM, GSN (to include two new classes for Perioperative Clinical Nurse Specialists and Doctoral Degree candidates), MPH, and Graduate Students, as well as personnel located at off-campus sites, such as Silver Spring, Maryland; the Walter Reed Army Medical Center; and, the National Naval Medical Center. The Training Officer also provided training at USU Faculty and Staff Orientations, which are held quarterly. At the user's request, the Training Officer performed specialized *hands-on* and *one-on-one* training for users on Microsoft Applications, GroupWiseE-Mail, the Proper Use of Network and Computer Resources,

Network Security, and the newly developed ROOTDOMAIN, as well as all supported UIS software and special requirements. The Training Officer, partnered with the USU Security Office, provided annual security awareness training required for all faculty, staff, and students. In support of the on-going strategic planning efforts, the Training Officer electronically distributed issues of the *UIS Newsletter* and the *UIS Quick Reference Guide* and finalized and distributed the *UIS User Guide*, in 2003. In addition, the UIS Training Officer began the development of a training schedule and topics for *Hands-On* training for implementation, during 2004. Both *Guides* and the *Hands-On* training were developed in response to the University's strategic planning efforts to improve on- and off-campus communications.

System Operations (*Network, Telecommunications, NetWare, and VAX*). In 2003, UIS System Operations continued to produce significant gains in the stabilization of the network. Emphasis remained on server stability. Again, USU experienced a University WEB exposure of over 99 percent uninterrupted up-time. In addition, the Operations staff maintained the Bethesda Naval Base fiber connectivity, when problems occurred in connectivity. ***Web Support -*** During 2003, the UIS Operations Division maintained and supported three web servers - *Primary*, *Interim*, and *Back-up*. The Primary Web Server hosted over 3,500 pages, during the past year.

Network. Network personnel are responsible for the University's network design, implementation, maintenance, and configuration management. During 2003, the network personnel continued to manage all local distribution systems with little, or no, down-time. ***The InterScan Virus Wall detected and deleted over 39,000 viruses from the Internet and e-mail servers***. Projects during the year included: adding over 100 workstation drops to the network; installing over 150 student test systems with private network access for the Center for Multidisciplinary Services (MDL); and, installing two student testing servers with special security and access rights. The large data storage unit is being utilized to support an active, on-line data retrieval system.

Telecommunications. During 2003, Telecommunications personnel provided support for: 2,236 voice and fax telephone lines; 1,400 voice mailboxes; and, video teleconferencing and satellite technical assistance for a wide variety of users. During the past year, the Telecommunications Branch processed 1,602 customer requests. Significant improvements were made in the reliability of communications, video conferencing, and satellite services. New telephone lines and support equipment were installed in several newly acquired locations. In addition, numerous telephone lines and support equipment had to be replaced throughout the University, due to on-going renovations and relocations. Video conference technology support was provided to many USU activities, to include the VA/DoD Distance Learning Program, as well as, the SOM Departments of Medicine, Preventive Medicine and Biometrics, Medical and Clinical Psychology, and Obstetrics and Gynecology. Satellite programs were also downloaded for the SOM Department of Preventive Medicine and Biometrics and the Armed Forces Radiology Research Institute (AFRRI). During 2003, the Telecommunications Branch provided twenty-four *48-Hour Emergency Telephone, Cable and Special Circuit Support* to on- and off-campus locations that experienced service interruptions; those interruptions were due to inclement weather, renovation-related problems, and/or water damaged cables. Projects, during 2003, included: upgrading the ATM circuit from 10 Mbps to 15 Mbps; installing the Verizon Internet dial-up modem, which provides for faster and more reliable Internet connection; and, upgrading the voice mail system from 1,200 to 1,400 mailboxes.

The Telecommunications Branch also resumed providing long distance telephone reports to Activity Heads and Department Chairs; and, Telecommunications personnel continued to receive professional training at local IT training sites.

Netware/GroupWise/Microsoft/Linux. In 2003, the LAN Operations Branch processed more than 1,824 customer requests. The Branch is responsible for: the Novell's File and Print Servers; six GroupWise E-Mail Servers; one in-bound Netware Server; one in-bound Gateway Sendmail Server; two in-bound and out-bound Linux Sendmail Servers; and, two Microsoft Domain Controllers. The Netware Administrators provided maintenance support for the following: back-up of over 600 gigabytes of data; space allocations; on-line support of hardware failures; virus protection; testing and implementing vendor patches and upgrades; LAN account creation and deletion; reliable mail and file storage; and, the maintenance, creation, and attrition of over 2,500 Netware and E-Mail accounts and over 1,000 dial-in accounts. The LAN Operations Branch upgraded six GroupWise 5.5 Servers to GroupWise 6. In addition, a large shared storage unit was implemented and attached to a Microsoft Windows Domain Controller to provide 3 Terabytes of additional storage. Other projects included the implementation of a new back-up solution, IP-based printing, server hardware upgrades, and the establishment of an E-Mail Gateway between USU and AFRRI.

VAX. The VAX Administrator is responsible for system maintenance, hardware, and the software for the VAX and ALPHA Computer Systems. During 2003, the VAX Administrator processed more than 60 customer requests. Other accomplishments include: removal of computer equipment no longer required; relocation of the central off-site *Hot Site* from Building 27 to USU Building 53 (under the direction of the National Naval Information Medical Command); shutting down the CUFS Financial back-up *Hot Site* at Building 27 and the creation of a new *Hot Site* at Building 53, which is now fully operational; migrating older/slower disk drives to newer/faster drives, which are on the latest controllers and provide increased performance and higher reliability; removing old user accounts and data to back-up tapes, which allows for the consolidation of the remaining accounts and data onto fewer disks; creating universal department accounts to assist in the processing of JV data; continuing updates of the system software to prevent system crashes; continuing the reduction of the overall costs of the hardware and software contracts through the elimination of equipment and software; and, continued efforts to enhance users' disks to improve processing times.

Security. During 2003, the Information Systems Security Officer (ISSO), investigated security incidents and virus attacks from the Naval Investigative Service, NNMC, the Fleet Information Warfare Center (FIWC), DoD, and the USU Security Office. In addition to investigating incidents, the ISSO reported subsequent findings to the requesting agency based on the appropriate reporting procedures. The ISSO played a major role in eradicating over 400 computer viruses, as well as investigating well over 25 reports of inappropriate use of desktop computers. Other successful projects included: ensuring security configuration management tasks were performed on Leased Machines; identifying USU dial-in users who required virus protection software; applying medical record standards to personal computers for certification purposes; providing guidance to students, staff and faculty on ROOTDOMAIN user

accounts, access, and unlicensed software; reviewing the use of the Privacy Act Information for the Department of Preventive Medicine and Biometrics for C2 certifications; and, providing System Management Service configuration and testing.

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Technology Transfer Program.

Background. Since 1980, Federal law has encouraged Federal laboratories and public academic institutions to transfer inventions and other technology to the public sector, which includes industry, state and local governments, and other academic institutions. This "technology transfer" process allows the benefits of public investment in research and development to be shared with all segments of our society. At the same time, institutions which invest public and tax-free funds in research are permitted to share in the downstream financial benefits of this investment - returning funds for use in further research and to provide limited financial incentives for individual researchers. Technology transfer includes cooperative research and development, patenting and protection of intellectual property, and licensing of inventions in return for a percentage of royalties. Because of the legal issues associated with these mechanisms and other aspects of technology transfer, the USU Office of the General Counsel is directly involved in the oversight of the University's Technology Transfer Program. Recognizing the growing amount of intellectual property developed by the University faculty, USU and the Henry M. Jackson Foundation (HJF) established a Joint Office of Technology Transfer (JOTT), in 2000, to enhance interrelationships with USU researchers and to facilitate both patent protection and commercialization of developing technology.

Through the assistance of the United States Army's Intellectual Property Division (pre-2000) and the JOTT, USU has established itself as a leader in biomedical technology transfer and one of the most productive and successful income producers among all government agencies. This success has enabled USU to provide substantial funding support for USU research, as well as significant monetary awards to individual scientists. A Technology Transfer Income Oversight Committee, chaired by the USU Vice President for Executive Affairs, provides oversight over the allocation of technology transfer income. University initiatives are also advanced through the use of collaborative research and development agreements, licensing inventions, intellectual property protection, and partnering with designated patent management organizations.

Current Activities. The USU Technology Transfer Program has been, and continues to be, a successful effort. A significant indicator of the success of this program is its efficient facilitation of the sharing of the USU research in a manner that promotes progress in science and improvement in the quality of health care for both the Armed Forces and the world community. In 2003, the University entered into: three new Cooperative Research and Development Agreements (CRADAs); 46 Material Transfer Agreements; 11 patent applications; and, 13 provisional patent applications. During 2003, eight patents were issued for USU inventions; and, two new invention licenses were signed, for a total

of 13 income-producing licenses. Numerous faculty researchers also received information and guidance from the staffs of the JOTT. Significant efforts were also made in managing and maintaining previously protected intellectual property, CRADAs, and licenses. Highlights, during 2003, also include: 1) continued development, in conjunction with HJF and several faculty members, of a Joint Patent and Technology Review Group; 2) involvement in the University's annual Research Day; 3) funding of short- and long-term research and educational efforts through special project funds and endowment accounts administered by the HJF; 4) direct funding support for the SOM's newly established Institute for Vaccine Research; and, 5) royalty sharing for nine faculty researchers.

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RESOURCE STEWARDSHIP

STEWARDSHIP: We will protect and enhance the human and physical resources of the University, optimize productivity, promote a sense of family and community, while emphasizing flexibility in response to changing world conditions.

- Goal 5, STEWARDSHIP, USU Strategic Plan, 2003.

New Construction on the USU Campus.

Background. Since 1978, there has been no additive construction to support USU activities despite the growth in the number of degree-granting programs conducted by the University and major increases in the cost-effective oversight responsibilities assigned to the USU by the Office of the Assistant Secretary of Defense for Health Affairs (OASD/HA). Some of the expanded responsibilities include: the Graduate School of Nursing (GSN); administration of the TriService Graduate Medical Education (GME) Programs for the National Capital Region; mandated professional Continuing Health Education (CHE); and, essential credentialing programs for the MHS. In addition, *the accrediting entities for the University have continuously recommended that USU address the expanded academic program requirements for small classrooms; and, they have expressed serious concerns over the separation of the GSN faculty and students between two locations, which adversely impacts student instruction, mentorship, and counseling*. Between September 1993 and December 1997, USU was prohibited from participating in the military construction process. However, following the December 1997 decision of the Secretary of Defense that the University should remain open, as stated in Program Budget Decision 711, the USU Vice President for Administration and Management (VAM) was directed by the USU President to provide oversight for the resubmission of all documentation and related efforts required for the construction of a fifth building on the USU campus.

The Beginning of a Four-Year Process for an Approved Construction Project. On April 4, 1997, a Health Affairs site team determined that the construction of a fifth building at USU, in Fiscal Year 2001, would eliminate leasing costs and would be cost-effective. On March 26, 1998, Design Authorization 98-N-10 was provided to the Naval Facilities Engineering Command with the following directions: 1) the inclusion was to take place in Fiscal Year 2001; 2) the scope of construction was to include 8,312 gross square meters; 3) the design/construction amount, in 1997, was $15,000,000; and, 4) DD Form 1391 and a Draft Program for Design were provided with the authorization. The Navy Facilities Engineering Command completed its call for contractor bids on the design requirements for the USU construction project and remained on hold until the USU construction was approved by Health Affairs. In May of 1998, Health Affairs determined that construction at USU would not be included in the Fiscal Year 1999 Defense Health Program (DHP) MILCON package; and, the Surgeons General would be required to identify funding from their Medical Construction Programs. *In June of 1998, the Senate Committee for the 1999 Military Construction Appropriation Bill urged* ***"the Department of Defense to address the requirement for a fifth building construction project in the Fiscal Year 2000 budget."***

During 1999, ***the Military Construction Appropriations Bill for FY2000 included the following: "The Tricare Management Agency is directed to accelerate the design of this project*** (the construction of a fifth building on the USU campus) ***and to include the required construction funding in its fiscal year 2001 budget request."*** In response to the congressional directive, and, in its capacity as the Executive Agent for USU, on October 26, 1999, the Navy Bureau of Medicine (BUMED) Facilities Planning and Programming Division initiated the contracting process for a Project Planning Study. The USU Project Planning Study, to develop a quantifiable needs assessment for space, began on December 6, 1999; BUMED also established a TriService Study Team to review and validate the identified requirements; and, the USU President also established an *ad hoc* committee to assist the VAM. The first phase of the study was provided in draft form to the TRICARE Management Agency, in January of 2000; in addition, the VAM organized inclusive background notebooks, which provided documentation, projected space requirements, and mission-related information covering the program requirements for the nine USU requirements that were included in the Project Planning Study: (1) the unification of the ***GSN*** faculty and students at the USU campus; (2-6) the cost-effective relocation of essential personnel to the USU campus (***GME***, to include the Administrative Office for the National Capital Consortium, ***CHE***, the Military Training Network (***MTN***), Preventive Medicine and Biometrics (***PMB***), and the ***TriService Nursing*** Research Program Liaison Office; (7) address a severe shortage of ***classrooms and lecture halls***; and, (8-9) provide housing for both the ***USU Office of Educational Affairs*** (to include USU readiness and simulation requirements) and critical requirements of the Office of the USU President, to include the ***USU Chaplain***.

BUMED Study Validates the Proposed Construction. The BUMED Study Team focused on two primary areas of concern: 1) the functional shortfall of current and projected requirements for small, multi-functional, and multi-configuration capable classrooms; and, 2) the cost-effective relocation of USU activities from leased space to the USU campus. The BUMED Study Team coordinated a justification/validation process with the Services for the requested space. Following the validation process, a memorandum was completed by BUMED and forwarded by the Navy Surgeon General on February 17, 2000, to the Chair of the USU Executive Committee; the memorandum recommended that the Surgeons General pursue a joint decision to program funding for the proposed construction of Building E on the USU campus. On April 12, 2000, USU was informed by BUMED that a consensus had been reached among the Surgeons General on the following factors that represented the position of the USU Executive Committee: 1) the project represents validated space requirements and is needed; 2) the current estimated project cost ($9 million) is appropriate; and, 3) the project should be programmed by TMA (TRICARE Management Activity) utilizing standard MILCON processing milestones (i.e., FY05 or later). ***On September 25, 2001, USU was notified by BUMED that its construction project had been included in the TRISERVICE Medical MILCON Program for Fiscal Year 2006 at a total cost of $9,300,000 (the total was increased to $9.6 million, by TMA, in January of 2003)***.

Scope of the Construction Project. The total scope of the proposed construction project is 56,020 gross square feet, which includes underground parking. The Program for Design distributes 41,055 gross square feet to meet the University's requirements for ample circulation associated with the movement of students and staff between classrooms. The 41,055 square feet will be constructed with a fibre-optic backbone throughout the occupied portions of the building and connected to the existing USU IT network.

Breakout of the 41,055 square feet reflects as follows: *Education Offices/Administrative Support* - 21,315 gross square feet; *Classroom/Classroom Support Space* - 12,065 gross square feet; *General Support* (Toilets/Lockers, etc.) - 4,346 gross square feet; *Distance Education Production Laboratory* (Studio) - 2,654 gross square feet; and, a *Computer Learning/Testing Area* (20 Stations) - 675 gross square feet.

All Required Studies for the USU MILCON Project Are Completed. The coordination process for the proposed USU construction project was developed using the Defense Medical Facilities Office, Office of the Assistant Secretary of Defense for Health Affairs, Space and Equipment Planning Systems (SEPS). The Bureau of Medicine, the Engineering Field Activity Chesapeake, the Naval Facilities Engineering Command, and the TRICARE Management Activity, Health Affairs, directly coordinated in the development of the construction project. All studies/analyses were completed and provided in a Project Notebook, dated October 2000. The *Environmental Assessment Study*, initiated in October of 2000, was coordinated and subsequently completed; in mid-November of 2001, USU was informed that the proposed construction would not adversely impact the environment; and, an Environmental Impact Statement would not be warranted. A request to the Chief of Naval Operations (CNO) for a formal determination was submitted; ***the CNO's written response, documenting no significant impact/approval of the environmental assessment findings, was dated September 17, 2002***.

TMA Approves Design Authorization for the USU Academic Program Center Project. ***The Military Construction Appropriations Bill for Fiscal Year 2003 included $1.3 million for the accelerated design of the USU Academic Program Center.*** During December of 2002, BUMED requested that the VAM provide/present a briefing/point paper on the University and a tour of USU for staff from the TRICARE Management Activity (TMA). Next, the VAM provided an overview of the on-going collaborative activities between USU and the Department of Veterans Affairs (VA). ***On January 8, 2003, USU was provided with documentation from TMA authorizing the design of the USU Academic Program Center Project at $9.6 million and the approved Program for Design.***

Ewing Cole Cherry Brott, Architectural and Engineering (A&E) Firm, Is Selected by the NAVFAC Medical Facility Design Office. The A&E firm selected by the Engineering Field Activity Chesapeake Naval Facilities Engineering Command is ***Ewing Cole Cherry Brott***. On March 17, 2003, representatives from BUMED, the NAVFAC Medical Facilities Design Office (EFA Chesapeake), and the A&E firm met at USU for a preliminary meeting pending the awarding of the contract for design. The USU President, the VAM, and the Facilities Division represented the University.

S-1 Design Meeting - May 21-22, 2003. Following the awarding of the design contract, on May 21-22, 2003, a pre-design (S-1) meeting was hosted at the Washington Naval Yard by EFA Chesapeake. Most of the meeting was spent determining which activities would be placed on the Ground, First, and Second floors of the new building. The University was asked to respond to several action items following that conference; all information was provided to EFA Chesapeake by June 10, 2003. A field investigation took place, which included a site visit to USU to conduct soil borings and measure the surface of the project site area.

S-2, S-3 and S-4 Design Meetings. The second design meeting (S-2) with the A&E took place on September 16-17, 20003, at the USU campus. The purpose of the S-2 was to: conduct a review of the S-2 design submittal; identify and resolve all major space program assignments and deficiencies at an early stage in design; develop the massing and aesthetics of the facility; and, establish the scope of the building. Unresolved comments/concerns from the S-2 meeting were incorporated into the S-3 submittal. The S-3 Design Meeting was held on March 1-2, 2004; most concerns were resolved either before, or during, the meeting. The S-4 Design was submitted by the A&E to EFA Chesapeake on July 1, 2003; on July 20, 2004, NAVFAC (EFA Chesapeake and the Medical Facilities Design Office) successfully presented the S-4 design to the TRICARE Management Activity, at OSD. At this time, the Construction Award is expected to take place between December of 2004 and March of 2005.

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Navy Base Allocation of Space to USU. Since 1998, the Vice President for Administration and Management (VAM), has led the coordination with the National Naval Medical Center (NNMC) for the reallocation of space that was once occupied by the Naval Medical Research Center (NMRC). ***Over 48,140 gross square feet of space has been added to the University, through these efforts.*** Following confirmation of adequate funding to support the new space; a successful coordination process with NNMC; and, the completion of a separate Memorandum of Understanding for each building, USU has been allocated responsibility for Buildings 53, 59, 79, 28, and 139. NMRC's relocation process was completed in July of 2001. Building 59 was made totally available to USU, during 1999; Buildings 28 and 79 were turned over to the University, during 2000; Building 53 was assumed by USU in July of 2001; and, Building 139 was allocated to USU, during 2002.

To date, four USU School of Medicine Departments: Clinical Pharmacology; Psychiatry; Radiology and Radiological Sciences; and Neurology (*11,969 useable square feet*), the Graduate School of Nursing (*635 useable square feet*) and the Multi-Disciplinary Laboratories (*676 useable square feet*) occupy a total of 13,280 useable square feet in Building 53; Building 59 is occupied by the SOM Department of Military and Emergency Medicine with *1,066 useable square feet*; and, the top floor of Building 28 is occupied by the Graduate School of Nursing (*1,206 useable square feet*) and the SOM Department of Medical and Clinical Psychology (*1,127 useable square feet*); the bottom floor of Building 28 is occupied by the USU/OSD Patient Safety Program (*821 useable square feet*) and the USU Center for Health Disparities Research and Education (*798 useable square feet*).

In accordance with the USU Strategic Plan, which calls for the acquisition of additional laboratory and administrative space for the University programs, ***six SOM Departments occupy 14,162 useable square feet of space in the newly acquired buildings; the GSN occupies 1,841 useable square feet; the MDL controls a USU Conference Room, with 676 useable square feet; and, two University activities occupy 1,619 useable square feet. To date, over 18,298 useable and renovated square feet have been allocated to ten USU activities and departments.***

Building 53. Building 53 is a two-story structure with an additional mid-level basement that houses the building and hyperbaric mechanical support systems. The allocation of Building 53, which includes approximately 32,285 square feet, addresses USU's urgent requirements for laboratory, administrative, and storage space; these requirements will **not** be addressed by the proposed construction of a fifth building on the USU campus. Building 53 includes 12 large laboratories and several thousand usable square feet of administrative space. At the request of the USU President, the Dean of the SOM directed his space committee to make recommendations through him to the USU President for the allocation of space on the second floor of Building 53. That process was completed by the beginning of 2003. For Fiscal Year 2003, the annual utility bill for Building 53 was $410,263; the cost of annual custodial requirements, during 2003, was $71,630.

Building 59. Building 59, a two-story structure, has 4,072 usable square feet, which include an immersion pool/tank, a physiology lab, an instrumentation lab, and divers' lockers. Following minor renovations completed during 1999, investigators from the Department of Military and Emergency Medicine moved into Building 59. Building 59 receives its information systems support through

equipment located in Building 53. The annual utility bill for Building 59 during 2003 was $22,133; the cost of annual custodial requirements for Building 59 was $9,974.

Building 79. Building 79, adjacent to Building 59, is a two-story structure with an unfinished second floor; it offers 1,066 usable square feet. The annual utility bill for this building was $2,360; and, the annual custodial requirements will be calculated when the space is utilized. In September of 2003, funding was obligated for the initial design and renovation of the building.

Building 28. Building 28 is a two-story structure with a total of 5,155 square feet. Renovation of the second floor was completed and by mid-2002, it was used by two USU activities: the Graduate School of Nursing (1,206 useable square feet) and the SOM Department of Medical and Clinical Psychology (1,127 useable square feet). The renovation of approximately 1,619 square feet of space on the first floor was completed in June of 2004; it houses the USU/OSD Patient Safety Program (821 useable square feet) and the USU Center for Health Disparities Research and Education (798 useable square feet). Utility costs are being estimated for 2004; the annual custodial costs were $12,455.

Building 139. Building 139 is a one-story structure with approximately 5,562 square feet, which was made available for the USU SOM Department of Surgery and the USUHS/Windber Medical Center/ Walter Reed Army Medical Center/Department of Navy Clinical Breast Care Project, during 2002. This research project utilizes a multidisciplinary approach as the standard of care for treating breast diseases and breast cancer. The multidisciplinary model integrates prevention, screening, diagnosis, treatment, and continuing care; the project is further unique in the proposed incorporation of advances in risk reduction, informatics, tissue banking, and research. The Clinical Breast Care Project paid for all required renovations; it also paid all costs associated with the building to include utility, maintenance, and custodial requirements, during 2003.

Renovation of the New Buildings. Due to the condition of the newly acquired buildings, renovation efforts have been on-going. For example, in September of 2002, with the approval of the USU President, the VAM successfully coordinated with Resource Management and the Navy Public Works Center to complete the required documentation for the obligation of funding to renovate the lower level of Building 28. It was decided by the USU President that the renovated space would be allocated for the USU/OSD Patient Safety Program (821 useable square feet) and the USU Center for Health Disparities Research and Education (798 useable square feet); the renovation project, in Building 28, was completed in June of 2004. New roofs were installed on Buildings 28, 53, and 59, during 2003. Significantly, resources were funded at the end of 2003 for the renovation of the air handling units in Building 53, which will be completed, during 2004. Requests for future renovation requirements and upgrades, in these newly acquired buildings, are continuously being planned and incorporated into the USU Facilities Division Project Listing, in anticipation of available end-of-year resources.

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USU Facilities Division Project Listing Serves as the Strategic Plan for Construction and Renovation Requirements at the University.

Background. For seven years, the USU Facilities Division, under the direction of the USU Vice President for Administration and Management (VAM), has successfully coordinated with the Navy Public Works Center (PWC) to streamline and maximize the process for obligating funding for urgently required renovation projects throughout the University's infrastructure, during, and at the end of, each Fiscal Year. Such a process requires extensive documentation and must comply with DoD regulations for the acceptance of funding by PWC, Engineering Field Activities, Chesapeake (EFA), or the USU Contracting Office.

An On-Going Process. During each Fiscal Year, the USU Facilities Division and the Director of Logistics meet weekly with PWC personnel and the VAM to: 1) ensure open communication; 2) resolve on-going concerns and issues during the implementation of previously funded projects; and, 3) ensure the preparation of documentation for future projects and the on-going obligation of funding as it is identified by the USU Vice President for Resource Management. A Project Listing is regularly updated and provided by the USU Facilities Division to all participants at both PWC and USU to ensure that this demanding process is both open and accurate, to include the required monitoring of on-going projects, and the maintenance of complete and accurate status information.

The Project Listing currently includes the following information: 1) the status of unfunded projects for the current Fiscal Year, to include design and construction costs; as of June 28, 2004, there are 60 active projects in this section of the Project Listing (*this total does not include 18 unfunded Fiscal Year 2004 laboratory projects*); 2) totals and status of completed documentation submitted by the USU Facilities Division to the USU Office of Resource Management for projects recommended for funding in the current Fiscal Year (*2004*); 3) totals and current status of projects already funded during the current Fiscal Year (*2004*); as of June 28, 2004, $2,656,716 has been funded during the current Fiscal Year (*2004*); and, 4) the current status of all previously funded projects during past Fiscal Years (***Fiscal Year 2002:*** *from June 4, 2002 through September 30, 2002, a total of $10,051,460 had been obligated by USU with the PWC;* ***Fiscal Year 2003:*** *from October 1, 2002 through September 30, 2003, a total of $11,918,827 had been obligated by USU with PWC*).

This process is both time consuming and complex; however, it has been found to be most acceptable by both PWC and USU management. The USU Facilities Division Project Listing serves as the ***Strategic Plan for the Construction and Renovation Requirements*** for the entire USU complex. As projects are completed, new requirements are constantly being identified by the PWC engineers and the USU Facilities Division; once recognized, they are entered into the Project Listing and begin the documentation and funding process. As a result, the USU campus (to include the newly acquired buildings) is well maintained and reflects excellent stewardship on the part of the leadership of the University. Without the Facilities Division's time-proven process, the University would not be in a position to accept funding from Health Affairs or other sources during, or at the end of, each Fiscal Year. During the past three years, the support from the USU Vice President for Resource Management (RM) has been excellent. The VAM and Facilities Division spend many hours coordinating with RM to ensure that the infrastructure of the USU campus is well maintained, through the obligation of funding

with the PWC. The on-going selection, design, and renovation of research laboratories has also been streamlined through the decision-making process established by the Dean of the School of Medicine on July 2, 2002; the laboratory renovation process is coordinated with the USU Vice Presidents for Research and Resource Management.

Laboratory Renovations throughout Buildings A, B, C, and D. During 2000, with the approval of the USU President, and the identification of funding by the Vice President for Resource Management, the VAM and the USU Facilities Division provided oversight for the renovation of 2,310 square feet of laboratory space throughout the USU complex. Laboratory renovation was completed, through the Dean, SOM, for four Departments: Biochemistry; Obstetrics and Gynecology; Radiology and Radiological Sciences; and, Anatomy, Physiology and Genetics. During 2001, one laboratory with 468 square feet was renovated within the Department of Biochemistry. With the 33,127 square feet of renovated laboratory space that took place from 1993 through 2000, combined with the 468 square feet of renovation, during 2001, the total of renovated laboratory space was approximately 33,595 square feet, or 38.6 percent of the 86,926 square feet of laboratory space in the USU complex. During 2003, 1,862 square feet of laboratory space was renovated for three SOM Departments: Obstetrics and Gynecology (two laboratories - 460 square feet); Microbiology and Immunology (two laboratories - 690 square feet); and, Anatomy, Physiology, and Genetics (two laboratories - 712 square feet). *Combining the total of 33,595 previously renovated square feet with the 1,862 square feet renovated, during 2003, totals 35,457 square feet; or, 40.8 percent of the 86,926 total square feet of laboratory space at USU. During 2003, $1,120,926 was funded for laboratory renovations* through collaborative efforts with the VAM, the USU Facilities Division, the Dean of the School of Medicine, and the Vice Presidents for Resource Management and Research.

Renovated Space in Building 53. Throughout 2000 - 2003, with the approval of the USU President (and the identification of funding for projects by the Vice President for Resource Management), *the USU Facilities Division provided oversight for contracted work, support, and manpower from its Division staff for the renovation of a total of 7,899 square feet of laboratory and administrative space in Building 53*. The SOM Departments of Medicine (Clinical Pharmacology - 2,630 square feet), Psychiatry (1,932 square feet), and Radiology and Radiological Sciences (2,026 square feet) represented a total of 6,588 square feet of renovated space for the SOM; the Graduate School of Nursing had 635 square feet renovated for mentoring and educational use; and, the MDL Division of Teaching and Research Support had a conference room with 676 square feet renovated for use by the entire USU community. All of the extensive relocation and furniture requirements for the USU personnel assigned to these renovated spaces were coordinated by the USU Logistics Division. *During 2003, $331,747 was funded for replacing the air handler units; and, $227,106 was funded for installing natural gas capabilities, in Building 53*.

Heating/Ventilation/Air Conditioning (HVAC) Replacement Project. Following the identification of environmental and health concerns reference the necessary air exchanges required throughout the USU complex and the inability to procure replacement parts for the antiquated USU HVAC systems in Buildings B, C, and D, the VAM and the Facilities Division, with the approval of the USU President, coordinated with the Public Works Center (PWC) to design a complete replacement of the USU HVAC system. Building B was selected as the first area for renovation because it had the poorest air exchange

in its laboratories. Phases 1 through 7 have been completed. Phases 1-7 ($8,900,000) included the construction of a mechanical room and the replacement of the HVAC system throughout Building B; this project began during 1999 and was completed in October of 2001. Phases 8 ($2,456,260) and 9 ($2,403,680) included Building C; they were completed at the end of 2002. Phase 10 ($4,181,699) included Building D and was completed in early 2004. Since Building A includes a different HVAC system than Buildings B,C, and D and replacement parts are available for its HVAC system, air-handlers and ductwork in Building A will be renovated as appropriate, in future years. This expansive HVAC renovation project, including approximately 330,000 square feet, required the continuous relocation of various USU personnel; both the USU Logistics and Facilities Divisions dedicated extensive time and support to minimize disruption to the USU mission.

Anatomical Teaching Laboratory Renovation Efforts. During 1998, it was identified that the backroom/storage areas containing the freezers and work space for the Anatomical Curator required significant renovation. Late in Fiscal Year 2001, the VAM requested a review of the project and began coordination with the USU Vice Presidents for Resource Management and Teaching and Research Support for the renovation of both the work areas and the freezers. With the approval of the USU President, and the identification of funding by the Vice President for Resource Management, the Facilities Division coordinated with the Navy Public Works Center for an accelerated design for construction. That effort concluded successfully and $201,254 was obligated for the construction requirements, during September of 2001. Resource Management, through the USU Contracting Directorate, also obligated funding for the purchase of new freezers. The project was successfully completed, during March of 2002. In September of 2003, funding was made available to replace the air handler unit #1 ($1,751,532), which is critical to the Anatomical Teaching Laboratory; construction will begin in March of 2005.

Plaza and Elevator Repair. When the University was originally constructed, a drainage system had not been provided under the plaza. As a result, there had been a steady leakage of water throughout the underground garages and various areas at the ground floor level. Separate attempts had been made to correct this concern over the past years; however, none resolved the problem. During 2000, the Facilities Division worked with PWC/EFA to design a repair project for the plaza, which included four phases. The first two phases were funded during 2000 and completed. Funding in the amount of $654,112 was funded in September of 2001 for the final two phases. Work was completed, during 2002, and the contractors also finished some minor related projects to include the replacement of concrete.

Funding was obligated for the repair/renovation of the elevators in Building A (three elevators), Building B (four elevators), and Buildings C and D (four elevators). Determination of the order of renovation for the 11 elevators throughout Buildings A, B, C, and D was based on the number of repair calls and general deterioration of the individual elevators. The renovation of the 11 elevators took place, one at a time, to reduce the level of inconvenience to the USU community; estimated construction time per elevator was four months. Construction of the Building A elevators began, in August of 2001, and was completed during December of 2002. Construction of the Building B elevators began, in October of 2002, and was completed in late 2003. Construction of the Building C and D elevators began, in November of 2003, and were completed, in April of 2004.

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USU Campus Meets National Naval Medical Center Fire Regulations.

Background. Following the events of September 11, 2001, regulations for the enforcement of fire codes have been revitalized throughout the Federal Government. Within minutes of the terrorist attack at the Pentagon, occupants found themselves struggling to breathe due to heavy smoke, while they crawled along office floors and hallways to escape the resulting fires. This experience has reenforced the absolute necessity of providing written instructions, training, detailed evacuation routes, and unrestricted escape routes (hallways) for all personnel. Due to the shortage of office and storage space, throughout the USU campus, complying with the mandatory fire regulations has proven to be an on-going, difficult, yet successful process. On August 14, 2002, the USU received a memorandum from the National Naval Medical Center (NNMC) Fire Chief that identified specific areas of concern and fire code deficiencies. The USU Vice President for Administration and Management (VAM) coordinated a memorandum that was distributed to all USU personnel, on September 12, 2002. That memorandum addressed two major areas of concern: 1) occupant instruction and training regarding fire safety; and, 2) the clearing of all USU hallways in Buildings A, B, C, D, 53, 59, and 28. The USU Facilities, Logistics, Administrative Support, and Security Divisions worked directly with the SOM department chairs and administrative officers to meet the NNMC fire and safety regulations.

Actions Completed to Bring the University into Compliance with Fire Regulations. The first action concerned the USU Instruction providing the *Occupant Emergency Plan* for the University; it was updated and re-issued on October 25, 2002. Copies were provided to all activity heads and chairs and the instruction was also made available on the USU Web Site. A process has been implemented so that all current and new employees are made aware of the Occupant Emergency Plan. Next, *Emergency Evacuation Personnel Listings* of those USU personnel designated with specific responsibilities during an evacuation such as hallway monitors, assistants for the handicapped, etc., were updated and issued to all activity heads and chairs. The Director of the USU Security Division met with all personnel included on the listings to ensure that they were fully prepared to carry out their responsibilities. The USU Security and Facilities Divisions also *identified and verified all evacuation routes and posted evacuation signs throughout the USU campus*; this information is also posted on the USU Web Site. Following an emergency evacuation drill coordinated with the NNMC Fire Chief, on November 8, 2002, the VAM issued a briefing paper to the USU community on November 19, 2002, on *emergency evacuation procedures*. The focus of the briefing paper was on the critical requirement for compliance and specific directions on what actions should be taken during an emergency evacuation. All activity heads and department chairs are responsible for ensuring that all of their personnel know the evacuation routes and procedures to be followed during an emergency evacuation. Two *training sessions were coordinated by the USU Security Division, during January of 2003*.

The most difficult requirement for compliance included *the clearing of all hallways, throughout the USU campus*. All hallways had to be cleared except for the following items: already existing duplicating equipment and one filing cabinet per principal investigator/course instructor. Nothing can be placed on top of the filing cabinets; no storage cabinets may be placed in the hallways. Approved items must be placed on only one side of the hallways, to include the carts and trash cans that are placed inside the laboratories at the end of each working day. The VAM and the Facilities, Logistics, Administrative

Support, and Security Divisions established a schedule for meeting the NNMC Fire Regulations and conducted inspections throughout the entire campus. *Since the process began, during late 2002, and was successfully completed, in March of 2003, over 200 filing cabinets have been removed from the USU campus*. This is an incredible accomplishment on the part of the USU community. It was a time-consuming and difficult process, which included an extensive review and disposition of files, equipment, and supplies by the activity heads, chairs, and their administrative officers. In support of this effort, over 100 file boxes have been stored in the record management holding area of the Administrative Division; and, additional storage areas were constructed, in coordination with the NNMC Fire Chief, on the second-floor walk-way between Buildings B and C. Those storage areas were distributed in a manner to ensure compliance with the NNMC Fire Regulations. *At this time, the University has satisfactorily met all requirements of the NNMC Fire Chief*. The VAM and the Facilities, Logistics, Administrative Support and Security Divisions continuously inspect the hallways of the entire campus to ensure on-going compliance.

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Resource Management Programs.

Background. The areas of responsibility described below are under the oversight of the USU Vice President for Resource Management. **Mr. John E. Dexter** was selected as the first USU Vice President for Resource Management in June of 1990; he served in that capacity until November 19, 2000. Following an extensive search, the second USU Vice President for Resource Management, **Mr. Stephen C. Rice**, was selected and assumed the position on November 20, 2000.

Financial & Manpower Management. The University's Financial & Manpower Management (FMG) Directorate successfully closed out the Fiscal Year 2003 Operations and Maintenance account (one-year money) with obligations of $96,103,000, for an obligation rate of 99.995 percent. During the last quarter of Fiscal Year 2003, the University received an additional allocation of $3,000,000 to be applied against the University's maintenance and repair budget for the replacement and upgrade of air handlers and acid waste drain lines. The University was also able to make significant progress on its equipment back-log, funding over $1,800,000 in support equipment.

Once again, ***the University maintained the finest Travel Card Program in the Department of Defense***. USU's delinquency rate average of only 0.5 percent far exceeded the Department's *benchmark* of 3.0 percent. What makes this record noteworthy is the fact that hundreds of claims reflect long-term travel (30 days or more); however, the reimbursement process is so prompt, for both partial and final settlements, that travelers are not inconvenienced. A high level of support from the USU President, Deans, and Vice Presidents ensures the continued success of this highly visible program.

Financial Management underwent a reorganization of its Financial Services Office (FSO) by creating an accounting section for posting thousands of cross-disbursing transactions and to assist in addressing the new reporting requirements of Health Affairs, DFAS-Indianapolis, and Washington Headquarters Services. This reorganization was accomplished without additional hires. The Chief of

Accounting Systems and Policy assumed the responsibilities for heading the newly formed section. This reorganization will allow FMG to handle a growing workload by permitting accounting technicians to specialize. This change has the added benefit of reducing the amount of training required for each position, which should result in new personnel becoming effective members of the team, in a shorter period of time.

The FSO expanded its travel card program to include the use of a unit card for airline tickets for all of the USU Bushmaster field exercises. The University's field exercise commander expressed his appreciation to FMG for the new practice, as it provided him with increased flexibility managing extensive travel arrangements; it also facilitated the reconciliation of the monthly bill.

The University's bill for accounting support received from the Defense Finance and Accounting Service (DFAS) decreased by $38,000, or over eight percent, during Fiscal Year 2003 (from $493,000 to $455,000). This is a continuing result of the USU Accounting Systems & Policy (ASP) Division's oversight and provision of support to DFAS in the preparation of accounting reports. Charging outside organizations for their use of USU procurement services on direct cited funds saved $231,000 of USU administrative costs. An additional $412,000 of administrative costs were saved by billing for indirect costs associated with the reimbursable program.

FMG is actively participating in the University's effort to find a modern replacement accounting system for the College and University Financial System (CUFS) that will be compliant with Federal and DoD requirements. FMG has worked closely with DFAS and the TRICARE Management Activity (TMA) to help implement the daily transfer of detailed accounting data into the DFAS Corporate Database (DCD) from CUFS. This is an on-going effort and resources are continuing to be expanded in its development. Additionally, ASP has been working with HQ DFAS-Arlington on developing a system interface for the processing of the Intra-Government Transaction System. The development is in the *concept of operations stage* and increased participation will be required in the near future.

Two important financial management initiatives were continued, during 2003. First, Resource Management has added new vigor to the mid-year review process, meeting individually with each Chair, Vice President, and Activity Head. This has resulted in a new emphasis on shared problem solving for budgetary issues. Second, there is an increased level of detail and justification required in the USU budget submissions, leading to a clearer articulation of priorities and a better use of resources.

Resource Management Information Office. The Resource Management Information Office (RMI) is comprised of the Systems Administration Branch and the Information Systems & Services Branch. The RMI develops, maintains, and administers University resource management information systems for over 500 users located at USU and AFRRI. These systems consist of the College and University Financial System (CUFS), DoD's Standard Procurement System (SPS), and Research Administration's COEUS Grants Management System. During 2003, the RMI completed several program development and implementation projects; some examples of these accomplishments are listed below.

- ***Technical Lead for the AFRRI Merger into the USU CUFS:*** The RMI provided technical guidance and completed system set-up tasks that enabled the merger of AFRRI's financial activities into the USU CUFS. Implementation tasks included defining and coordinating the business process flow for the approval, tracking, and procurement of AFRRI's goods and services.

- ***Development of the CUFS/DFAS Corporate Database Interface:*** The RMI completed a DoD-mandated interface program between CUFS and the DFAS Corporate Database. The data transfer program provides a feed of the CUFS daily financial activity, from both USU and AFRRI, into DoD's central repository of accounting information.

- ***Development of a Grant Invoice Tracking Report:*** The RMI developed a tracking program to assist the USU Grants Management Office (GRT) with its management of grant invoices. The report assists GRT with prompt recognition of payment errors, as well as enhancing the overall administration of invoices through the payment cycle process.

Grants Management Office. In its fourth year of operation, the Grants Management Office (GRT) awarded 14 new grant agreements, worth more than $21,000,000; and, it completed over 100 modification actions to existing awards. Currently, the Grants Management Office manages 132 active USU agreements ranging from $28,000 to $41,000,000. The total award value of all awards is approximately $383,000,000.

There are more than 75 principal investigators conducting work on research projects awarded to 12 grant recipients. A majority of the awards go to the Henry M. Jackson Foundation and the remaining are awarded to other non-profit organizations including universities, private foundations, and institutions. Currently, there are 23 agencies providing funding support for the active grants. The Grants Management Office processes an average of 48 invoices per month for payment. These invoices are paid at nine different pay stations, both at DoD and Federal civilian sites.

The Grants Management Office also provides oversight for the TriService Nursing Research Program (TSNRP), a $9,000,000 program with more than 70 grants. TSNRP is a congressionally-funded program, which is supported by a staff and an Executive Director.

During 2003, significant accomplishments include the following activities:

- Served as the primary granting authority for TSNRP to approve and sign all TSNRP award documents, modifications and administrative actions requiring the authorization of a grants officer;

- Established a Review Team to conduct programmatic, legal, and financial evaluations of USU grant agreement actions and proposals. This team is made up of officials from GRT and the USU Offices of the Vice President for Research, Research Administration, and the General Counsel; representatives from the respective Oversight Committees are also included, as appropriate;

- Negotiated indirect cost rates for three new grantees and sub-grantees. Assisted by the Defense Contract Auditing Agency, GRT coordinated the completion of annual financial audits to

determine the rates that grantees can apply on their grant agreements; this effort has greatly assisted the grantees;

- Relocated GRT to permanent office space in G013. The new office space has facilitated the workflow, as it provides a central location for GRT personnel and files;

- Conducted an allowable cost review on grant programs to review program expenses. The results of the allowable cost review were submitted to the USU Review Team, which issued its concurrence and related concerns about certain program expenses; GRT provided the collective decision on approved expenses to the grantee;

- GRT approved advance payments to be issued on several grant agreements. The payments were made in an effort to provide for a more efficient distribution of funds to the grantee. This effort will subsequently reduce the number of invoice payments from twelve to four per year. Although advance payments have been authorized, the payment schedules are reviewed regularly; they may be adjusted quarterly, or to reflect the receipt of additional funds; and,

- Processed and closed out fifteen expired grant agreements, thereby reducing the number of grants on the active grants list. This process has reduced oversight and management of the grants and provided for the return of unused funds to the United States Department of Treasury.

Contracting Directorate. During 2003, the USU Contracting Directorate (CTR) provided significant support to the many unique programs of the School of Medicine, the Graduate School of Nursing, University Activities, the Armed Forces Radiobiology Research Institute (AFRRI), and numerous DoD initiatives and programs. The past year was characterized by both high productivity and significant challenge, primarily due to the loss of experienced personnel and the need to assemble a new acquisition team. While in the process of building a team of well-qualified professionals, CTR completed procurement actions amounting to nearly $28,800,000 - one of the highest amounts in the history of USU.

2003 was a banner year for USU researchers, which resulted in an increased requirement for contract support. The success of the USU research programs resulted in a number of new research projects funded by the National Institutes of Health and the Naval Medical Research Center. New missions directed by the Congress also brought about a significant increase in the demand for acquisition support; this category includes contracts for Molecular and Clinical Based Comprehensive Cardiac Care, the Center for Disaster and Humanitarian Assistance Medicine, the Casualty Care Research Center, the Center for Prostate Disease Research, and the Complementary and Alternative Medicine Program.

The University's use of the Government Purchase Card (IMPAC card) reached $8,641,525. The University has more than 200 cardholders and 50 billing officials who made 21,600 purchases, during 2003. This procurement authority, decentralized throughout the University to individual cardholders in departments, laboratories, sections, and offices, has revolutionized the acquisition of required items. The departments routinely obtain next-day desktop delivery, saving both time and money in the process. The Government Purchase Card (GPC) Program is the responsibility of the Contracting organization in each activity. CTR trains and appoints all cardholders and billing officials, which is a considerable

duty, given the turnover of personnel. In addition, CTR publishes training materials and standard operating procedures, and conducts annual audits. During 2003, the University Check-Writing Program, a component of the GPC Program, was reviewed in detail by a DoD Inspector General (IG) Team; their report found no significant issues.

CTR continued its emphasis on several government-wide programs to ensure the appropriate distribution of contracts to small and minority-owned businesses and the purchase of supplies from vendors who are blind, or otherwise handicapped.

Staffing and rebuilding a professional CTR workforce for the future was a major, on-going effort, during 2003. USU hired several college graduates who qualified for the Contract Specialist Intern Program; this provides a four-year period of both education and on-the-job experience, designed to grow in depth and complexity as the individuals progress through their internship phases. The USU is recruiting for additional qualified individuals; and, CTR makes use of commercial sector sources for obtaining short-term, expert contract assistance. Additionally, CTR has made use of other government departments' capabilities to assist with the timely award and delivery of needed supplies, services, and equipment. This authorized and innovative outsourcing gives CTR leverage and a multiplying productivity factor, enabling its small contracting staff to accomplish the University's procurement needs, while building a highly qualified new team for the future.

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